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# Curiosities Ⓢ

— of the —

# U.S. Patent Office

— by —

William Chandler Raymond

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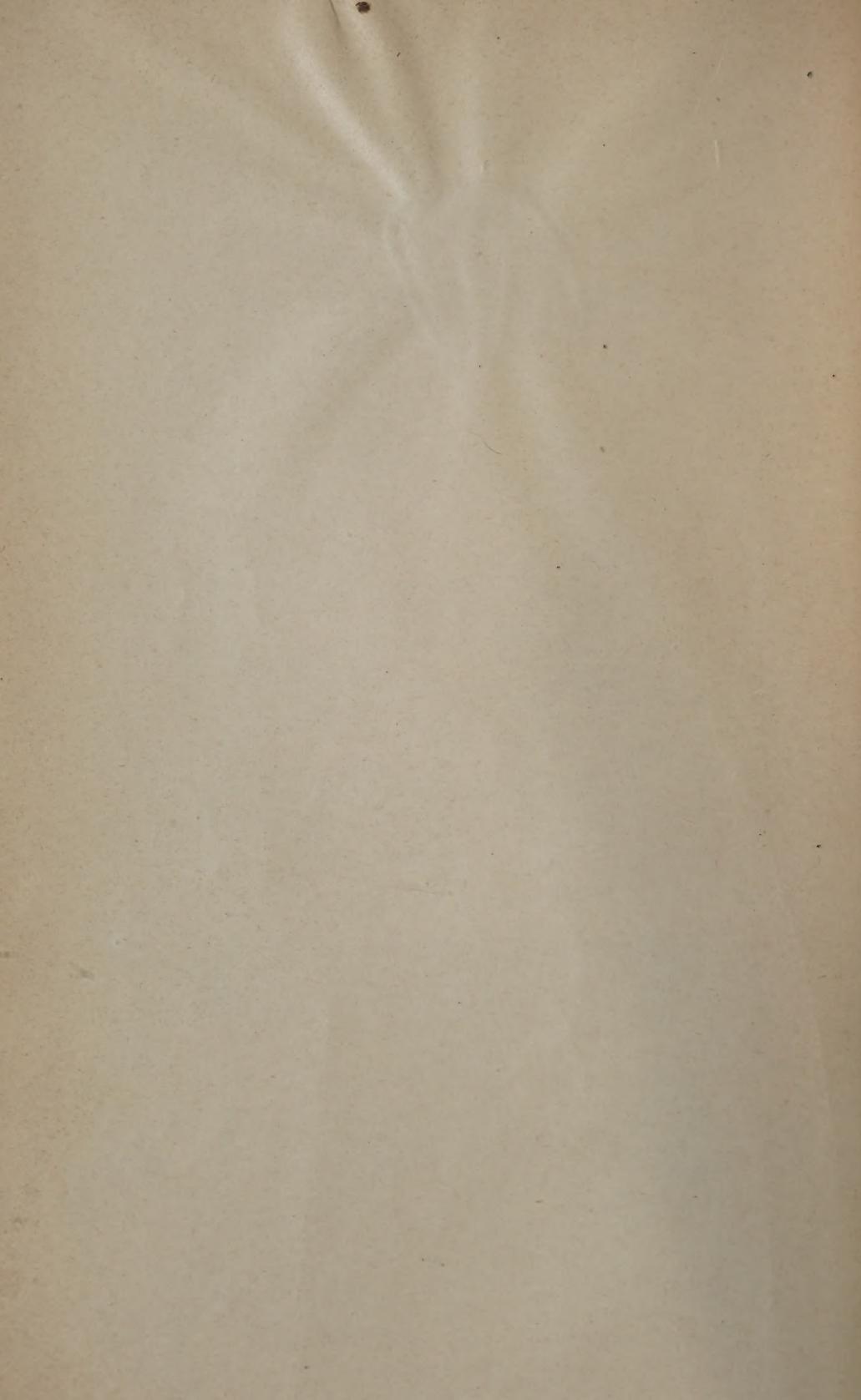
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# CURIOSITIES

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# U.S. Patent Office:

By WILLIAM CHANDLER RAYMOND,

(FORMERLY OF THE U. S. PATENT OFFICE, WASHINGTON, D. C.)

INSTRUCTIVE, ENTERTAINING AND AMUSING; AND FORCIBLY ILLUSTRATING THE OLD AND PECULIAR IDEAS, AND NOVEL AND WONDROUS INVENTIONS OF INVENTIVE GENIUS; THE CURIOUS, COMICAL AND REMARKABLE PATENTS GRANTED TO INVENTORS; THE HISTORIC RELICS OF THE UNITED STATES PATENT OFFICE; THE HISTORY OF PATENTS; ANTIQUITY OF INVENTION; EARLY AMERICAN INVENTIONS AND INVENTORS; ORIGIN AND WONDERFUL DEVELOPMENT OF THE AMERICAN PATENT SYSTEM; DESCRIPTION OF THE PATENT OFFICE BUILDING, EXTERIOR AND INTERIOR; THE GREAT PATENT OFFICE FIRE; THE ORIGIN, PROGRESS AND VALUE OF VARIOUS USEFUL INVENTIONS; THE TRIALS AND TRIUMPHS OF AMERICAN INVENTORS; IN FACT, EVERYTHING OF GENERAL INTEREST RELATING TO INVENTORS, INVENTIONS, AND THE UNITED STATES PATENT OFFICE GRAPHICALLY DESCRIBED.

ILLUSTRATED.

(ALSO AN APPENDIX.)

SYRACUSE, N. Y.:  
W.M. C. RAYMOND, PUBLISHER,  
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TO OUR  
AMERICAN INVENTORS,  
THE INDUSTRIAL VANGUARD OF OUR CIVILIZATION,  
THE AUTHOR DEDICATES  
THIS WORK.



## PREFACE.

Heretofore, there has been a manifest void or gap in the line of American literature, awaiting to be filled, and that was,—a work for general reading, relating to inventors, inventions and the U. S. Patent Office, presenting in simple, yet attractive, entertaining and instructive form, the curiosities of the United States Patent Office in all its varied phases, the idiosyncrasies of our inventors and patentees, the development and progress of American invention, and other kindred subjects; notwithstanding that in the opinion of the writer, fortified by consecutive years of service in that great depository of human ingenuity—the U. S. Patent Office, and subsequent years of direct and continuous association amongst the inventive class, there was an undoubted demand for a work of that character not only by the inventive, but equally as well by an intelligent reading public, whom as Americans and lovers of their country's institutions, are naturally interested in that which pertains to the Nation's inventors' and "Uncle Sam's" Patent Office.

In the appended pages the author has endeavored to fill that void, and treat the subject in such a manner as to necessarily interest, entertain, instruct, and, to a degree, amuse, the general reading public—as well as our inventive class.

With what success this has been accomplished, the reader thereof may judge.

From the inception of this work, (some time ago,) to the date of its completion, the author has, in addition to his own personal knowledge and observations, garnered from time to time, in the

## PREFACE.

midst of his professional duties, as opportunity afforded, all important facts and information leaning or bearing upon the subject, and utilized them in the preparation of this book, and, as he has aimed to be as accurate in his statements as is well possible, not only have the best authorities been consulted, and information obtained from sources presumably authentic, but he has also received, directly or indirectly, assistance from officials of the Patent Office.

CURIOSITIES OF THE U. S. PATENT OFFICE is therefore offered to the public with the hope that it will prove acceptable to all who take an interest in their country's development, prosperity, and institutions, and are desirous of becoming better acquainted with those most important factors in the industrial progress of this great Republic—our American inventors and the U. S. Patent Office.

*William Chandler Raymond*

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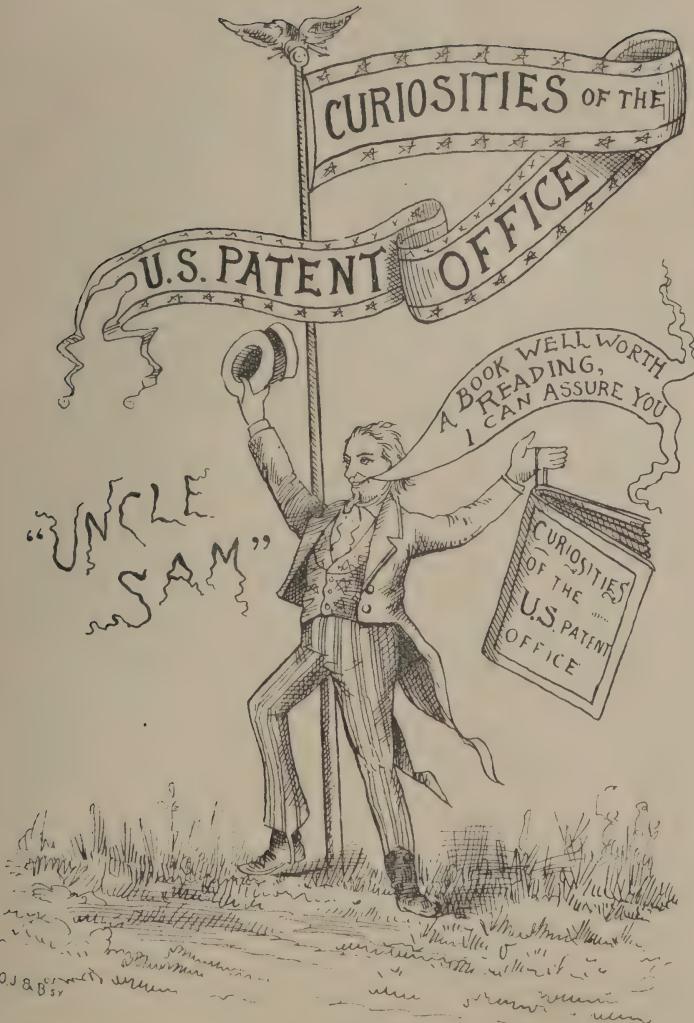
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# CHAPTER I.

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THE constant rush for patents at the Patent Office, would greatly surprise any one not familiar with the vast number of inventive individuals that are comprised by the term "American Inventors," and to whose inventive genius, zeal, pluck and go-ahead-ativeness, we are indebted for the most remarkable development of human ingenuity ever known in any country, or in any age of the world's history. And go where we may, in nearly every portion of our civilized globe, there may be found this or that article of American manufacture upon which is imprinted that symbolic word,—"patented." Naturally, the first inquiry that would suggest itself to one's mind would be this, "WHAT IS A PATENT?"

Unquestionably the most concise and comprehensive answer ever made to that question, was given by a certain well-known, laborious and successful Yankee inventor, when he said, "It is the right to sue somebody."

The Patent Law provides, that if you can prove that you are the original or first inventor of a new and useful device, something the world has never had before, you may receive from the government a document investing you with the exclusive right to make, use and sell it for seventeen years. But what is that? You were at perfect liberty to make, use, and sell it before. Very true: but this little document grants to you the *exclusive* right, that is, forbids any one else from making, using or selling it, that *you* may have the privilege of dealing in the invention without a competitor, and make whatever you *can* out of it. But will the mere fact of this government presenting you with a sheet or so of printed paper, embellished with a gorgeous crimson seal, prevent Tom, Dick and Harry from dealing in your invention, and raising up

a competition against you? Not at all. The one great, and all important fact, which gives it any virtue in your favor is that it is the *foundation* on which you can go into court and bring suit for damages against such dealers in your invention, thus furnishing you ground on which to defend and vindicate your rights under the law. The right thus given you to the exclusion of everybody else, has been greatly denounced, and is still, by some persons, as an odious monopoly, somewhat similar to those with which the people of England were so heavily burdened with in the time of King Charles, and which they so summarily rid themselves of by cutting off that king's head.

King Charles was hard up for money. He didn't want to call his parliament together, because instead of giving him what he wanted, they insisted on "investigating" him, and they, because he wouldn't do as they requested, refused to vote him the money he desired. But money he *must* have. So with Stratford, his great minister, he fell to contriving, and concluded he would give some single individual the exclusive right to sell salt to the people of England, and that person should turn over to him a share of the profits, and as everybody must have salt, and they could charge what they were a mind to for it, it was clear the profits would be immense. It is not to be wondered at that the people rose up against it, for the peculiar odium of the business was not so much that they would have to pay more for their salt, and "earning their salt" would mean a trifle more than ever before, but the act took *away* from the people of England a right which they all freely possessed *before*, viz: the right to trade in salt; and reserved it to the exclusive benefit of one man. In fact, the peculiar grievance of this king's acts were that they abridged the people of rights and privileges that they *already* possessed, and secluded them to single persons.

But a patent does not do this. A patent, whose validity is assured, *cannot* be issued to a person for a thing which the people already have the knowledge and use of. It is only when a person has invented something entirely *new*, something the people before had not knowledge or possession of, that he can receive a patent for it.

It is an extremely common thing for two or three individuals in as many different sections of this country, to hit upon substantially the same invention, and meet each other all at once in the Patent Office by their applications. Yet the government can grant

a patent to but one of them, and that one, the man who *first* conceived the idea and the practical working thereof. One day, not very long ago, there entered the Patent Office an honest, pleasant-spoken, intelligent mechanic, who believed that he had found a new way to construct a certain article. Like a sensible man, he concluded that before he would pay out his hard-earned money to apply for a patent, that he would look among some drawings in his line of invention, to see whether anyone else had already conceived the same idea. In a few moments, to his great astonishment and dismay, he discovered the same identical thing patented to somebody else several years before. Poor man, it was the bitterest kind of a pill for him to swallow. His countenance flushed, the sweat stood on his brow, he could hardly speak, but there was no help for him. He was *not* the *first* inventor, and he turned away with the suggestive remark, that "At times one's apt to find here at the Patent Office considerably more than he came for."

To the mass of people, there seems a magic in a patent. It appears to be a U. S. mint or a golden "horn of plenty," just ready to pour out at your feet gold dollars by the bushel.

And it is further supposed that the name and stamp of "patented" must at once so advertise the contrivance into public favor, that the people will come rushing along pell-mell to pour out their dollars at the feet of the complacent patentee to obtain it. In years gone by, when the patent system was in its infancy, there was something in that, but its all gone by now, and we all know perfectly well that a patented thing has to *prove* its merits, and pave its way to success, by doing handsomely what it professes to, just like anything else.

Many's the poor man who has thus crazily run to get a patent, thinking that that piece of printed paper with a red seal on it, would in *itself* buoy him to a fortune ; thinking that all one has to do is to procure a patent and the article will sell itself, just like hot cakes. As a rule, it is not so. Inventing a thing and getting a patent for it is oftentimes but the easiest half of making a success of it. Supposing, that like many inventors, he is poorly off financially, the first thing for him to do will be to get some friend or acquaintance to take hold of it, to manufacture, or use or sell it, and this is not alway easy, and when he has succeeded in that, there still lies before him the most difficult task of all, and that is, making the public think it is *worth* buying and using. There was a time when farmers wouldn't have a mowing machine go

into their fields, ('twould pizen the ground), and men and women sneered and laughed at the very idea of wearing anything sewed up by "that rattle-trap," the patent sewing machine, or a machine-made shoe in place of the old time brogan. There's an amount of faith in "letting well enough alone" in some people, when you offer them some newly patented thing, sufficient in a certain percentage of cases to somewhat discourage ordinary pluck or patience.

It is an indisputable fact, that what are now our most indispensable modern improvements had to *fight their way* into public use against mountains of prejudice. Millions have been made it is true, in sewing and reaping machines alone, but hundreds of thousands were spent before a dollar's profits were realized.

Some of the freaks of ingenious people, into which they are led by the delusion that a patent is going to run itself and bring them a harvest without further effort, are exceedingly curious to say the least. They will invent and patent a variety of things, that, in the very nature of the case it will be utterly impossible for them to *protect* with their patent, so far as it relates to the detection of infringement thereon, which infringement must be *proven* in order to successfully bring suit against trespassers upon their rights.

Three Mississippians patented a way for knitting two or three or four stockings on a single set of needles all at the same time.

A Pennsylvania man is said to have applied for a patent on a new mode of frying griddle cakes; and it is stated that there exists a patent on a neat and ingenious method whereby ladies can button up their shoes with lightning-like rapidity, and without undue exertion. And I am advised, that it was but a few years ago that a patent was granted for a mode of cooking stale eggs, without their bursting the shell, and by which it was claimed they were made equal to fresh ones. Moreover, there are patented several devices for preventing persons from snoring when they are asleep. One, resembling an ear-trumpet, extends from the mouth to the ears of the snorer, by which the noise of the snoring is carried strikingly to his own sense of hearing, and wakes him up. Another contrivance for the same purpose, is a device for keeping the mouth *shut*, being based on the theory that one cannot successfully snore if compelled to breathe steadily through the nose. While it may be fairly doubted whether these anti snoring devices would prove any too desirable when used in connection with one's regular nightly slumber, they might prove very useful for those



UNITED STATES PATENT OFFICE,

WASHINGTON, D. C.

VIEW FROM THE COR. OF 7TH AND F STREETS.

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well-meaning, yet sleepy individuals who *cannot* sleep in church and be *quiet* about it.

The above described inventions are but a few of the "curious patents," but *they* show that it is essential for a person at the very out-set to ascertain whether the contrivance which he proposes to patent is such a thing as in the nature of the case he can *protect* by his letters-patent.

The United States government will *not* act as a detective to spy out the invasion of an inventor's rights by other parties; that, the inventor or owner must do, and if the article patented is such a thing as naturally it will be difficult to detect illegal use of, so far, is the patent practically valueless. For, although the patents heretofore described were ever so sound in *law*, how *could* the possessors of them *detect* infringements of their rights? Into how many country sitting-rooms would he have a chance to penetrate to see whether the good old mothers and grand-mothers were knitting two, three or four stockings all at once on the same set of needles? How many kitchens could he pry into to see how the cooks were frying their griddle-cakes, or boiling the eggs? And it would be an extremely bold patentee who would *dare* to go about to espy infringements of his patent for a new mode for the ladies to button up their shoes; and the possessors of the anti-snoring patents would have to hire Santa Claus or the ghosts to be their detectives. But, if the inventor's prime or controlling motive is to obtain a letters-patent for the sole purpose of manufacturing and *pushing* the sale of any given device, appertaining to that class of inventions which will not readily admit of the detection of infringement thereof, by affixing the word "patented" thereto to give it prestige and importance in the eyes of the buying public, and without intent of attempting to *detect* infringements, then, to attain *that* end, the letters-patent would be of value to the extent mentioned first. Consequently it may be readily seen that there may be many things really patentable, as novel out-croppings of inventive genius, but which it is neither prudent nor wise to patent with any expectation of being *able* to *prove* infringement thereof.

## CHAPTER II.

---

**T**HERE are a great many odd, curious, eccentric, strange, extraordinary, whimsical and comical things that have been invented, and, in many cases, patents obtained therefor.

“Cow’s tail holders” form quite a field of invention; not the least amusing of which is a pair of broad-mouthed pliers that seize the lock of hair, at the end of the tail, and are fastened upon it by a ring embracing the handles, and then the very ends of the handles are enlarged to form heavy weights. That device *ought* to keep the old cow’s tail quiet even in *fly time*.

Application was made for a patent for “chicken hopples,” a device in which a sort of wrist-band was applied on the chicken’s wrists, and a pendent-pointed wire was attached thereto, and at liberty to swing up or down at the rear of the foot. The effect of which was that when she boldly advanced her foot to scratch, just at the forward limit of its movement, the wire caught by its end in the ground, and the result of her effort to scratch with both feet so shod was, that she *walked off the ground* in spite of herself.

On the prairies of the far West agricultural pursuits are very often attended with considerable danger, owing to the occasional raids made by the “noble red men” on peaceful settlers. To render the tilling of the soil somewhat more safe, two men, residents of Watertown, N. Y., secured a patent for what is known as the “Cannon Plow,” the beam being made of hollow metal. To illustrate its use, we will suppose, that two farmers are breaking up the soil of a western prairie preparatory to planting their first crop. While engaged at their work they are surprised by a band of hostile Indians. Naturally, the first thought of the hardy pioneers would be judicious retreat, and such a course they would

undoubtedly adopt were they not *fortunately* provided with the patent "cannon plows." Therefore, instead of running away, they coolly unhitch their horses, load the hollow metal plow-beams with a charge of canister, old nails, and pebbles, drop a little loose powder in the vents, light their pipes, and seat themselves at the rear of their implements to await the arrival of the redskins ; the latter rapidly advancing with the *prospect* of two easily obtained scalps, are suddenly *astonished* by a metallic hail-storm, which causes them to *reflect* that they have a very *pressing* engagement elsewhere, and hurriedly they take their leave, not over-pleased with the patent "cannon plow."

But to what *heights* of sublime genius did that man climb who conceived the idea of making sidewalks of India Rubber. It is said that they are rapidly coming into fashion out West, combining as they do, economy with durability. It is stated that the first experiment was made in a small town in Iowa, where three hundred yards were put down on one of the principal streets. All the boys in the place ran over it at full speed, but there was not the *least* noise. One day, a leading merchant stopped in front of his house, then, *suddenly*, jumped on his heels. The elastic forces hidden in the rubber threw him over the gate to the roof of the piazza. But, after a few trials, he was able to alight on the piazza steps with the graceful (?) accuracy of a flying squirrel. The chief draw-back to this walk is its odious familiarity in hot weather, but the disagreeable odor might be neutralized by a weekly wash of borax and coal-tar. Its principal advantage is that it can be *stretched*, and also that as the town grows it is *pulled out* towards the suburbs. Two yoke of oxen can lengthen it three miles a day. (The truthfulness of this last statement should be cautiously accepted, *if at all.*)

Not long ago a Duluth, Minn., individual proposed a "railroad on the ice" the whole length of Lake Superior, a distance of at least 400 miles. His proposition was to spike the rails to the ice, without grading, filling, excavating, balasting or ties. The track, he says, could be taken up every spring and stowed away. If he had only gone a step further with his gorgeous, rose-tinted idea, and provided a way to *float* the track when the thaw came, then the proposed railroad might have been used in summer as well as in winter, and with no occasion to take it up.

A toy lately patented, which is designed as an advertisement for cigar stores, consists of a figure of a dandy with a cigar-holder

in his mouth. In the pedestal, there is a small bellows, operated by clock-work and a spring. A small cigar is lighted and placed in the holder, the spring set in motion, and the dandy puffs away as naturally as life, until the cigar is consumed. What is the world coming to, when even toy figures enjoy the fragrant weed with apparently as full an appreciation of the exquisite bliss of smoking a real Havana, as does the most confirmed smoker.

Steam has long been used as a motive power, but it was left to Jeremiah Cory, of Holden, Mo., to conceive the *novel* idea of using *fowls* as a *motive power*, and to whom a patent was granted June 28th, 1870.

The insect known as the bee-moth has a predilection to enter bee-hives during the darkness of the night and rob the inhabitants thereof of their treasured sweets. How to prevent this was the problem, and the ingenious inventor of the device, before putting his ideas into practical shape, doubtless became *convinced* of the truth of these facts: First, the busy bee improves only "shining hours," and gathers honey from opening flowers only by day. Second, the bee moth has a habit of stealing honey under cover of the night; and Third, chickens retire to their roosts at twilight, and are aroused by the "shrill clarions" of the masculine portion of their population at an early matutinal hour. To utilize these propositions was the problem. How it was solved will be shown. The inventor's strange device consists of a poultry house, surrounded by a low platform, upon which is placed the bee-hives, the doors of which are connected with certain mechanism that is securely attached to the fowl's roost. The busy bees are *expected* to enter their domiciles a little before dark. After they are all in, the period for the roosting of the chickens arrives. The pressure transmitted to the machinery from the increase in weight of the roost caused by the chickens alighting upon it, closes the hive doors, thereby shutting the bees in. The bee moth on attempting to enter the hives finds himself barred out, and as the mechanism of the device is beyond his comprehension, it is to be inferred that he leaves in disgust. Meanwhile the chickens repose until the village cock proclaims the morn, when they abandon their roost, (thereby causing the hive doors to fly open) to resume their geological investigations of the surface of the adjacent soil, and thus return the bees, their treasured sweets, all safe, to the airs of heaven and flowers of earth.

An erratic individual in Wisconsin, presumably an Oshkoshian, has invented a "mechanical sheet-iron cat" with cylindrical attachment and steel claws and teeth. It is worked by clock-work. A bellows inside swells up the tail at will to a belligerent size, and by a tremolo attachment, causes, at the same time, the sheet-iron cat to emit all the noises of which a living one is capable. When you want fun and excitement combined, you wind up your cat and place him on the roof. Every cat that hears him sallies forth to meet him. It matters not how many attack him, for no sooner does the sheet-iron cat feel the *weight* of an assailant than his teeth and claws work with startling rapidity. Felines within his reach are badly torn, every fresh cat meets a similar fate, and the sheet-iron cat is left *alone* in his glory, monarch of the field, while quietude reigns supreme.

We have a patent "Bedbug Buster" by which the offending insects are persuaded into a hopper, placed under the influence of chloroform and stabbed in the back with a pitchfork, or else are dosed with quantities of laughing gas, so that they meet a hilarious death in violent hysterics. Also a "tumbler fly-trap" in which the hapless fly meets his doom in an alkaline bath. And some one else has discovered a valuable recipe for poisoning bugs, by a material "which they will never fail to eat while they can get it, and will as surely die; as it causes them to *froth* at the mouth, and to *split* in the back."

Another offspring of genius, Mr. Greene, a Michigander, obtained a patent Jan. 4, 1873, for a new method of slaughtering cheese skippers. The invention is nothing more or less than an *air-tight* circular box, within which the cheese is placed. The unhappy skippers, thus deprived of fresh air and cut off from the light of day, in the words of the patent, or substantially so, "All leave the cheese and drop down dead." Why they should pursue such a course, or as to the nature of the malady with which they are seized, and which invites the approach of the fell destroyer, the scientific researches thus far made into the physiological constitution of the cheese skippers, are *as yet* not sufficiently extended to enable one to determine with any accuracy. Suffice to say, that after a period of a few hours, their once active bodies lie senseless clay upon the bottom of the cheese box.

One man not very long ago, wished to patent the application of the Lord's Prayer, repeated in a *loud tone of voice*, to prevent stammering.

While one of the fair sex has patented a crimping pin, which can be *used* as a paper-cutter, skirt-supporter, a paper file, a child's pin, a boquet-holder, a shawl-fastener or a book-mark.

Returning to the sterner sex, we come across a man who proposes to cure worms, by *fishing* for them in the human stomach, by means of a delicate line and tiny silver hook, baited with a seductive pill, that the worm will eagerly swallow, and "to his surprise will find himself dangling on the silver hook." They say he secured his patent. And, a Philadelphian, Myers by name, received a patent for a "tape-worm trap," which consisted of two gold spring jaws, having serrated teeth and operated by a trigger. The idea was that the patient should be starved for two or three days until the tape-worm became very hungry, whereupon the trap, previously baited with a sweet-meat, was cautiously inserted in the patient's throat; then, the starved worm would make a strike for the candy and the jaws would spring together, catching Mr. Worm by the head, when he could easily be drawn out through the patient's throat and mouth. These are *funny* inventions beyond controversy.

And, it has been stated for a fact, that some time ago an enterprising individual sent a letter to the Patent Office describing a new process of embalming, which he had originated. It was accompanied by the model,—an *embalmed baby*,—which he requested should be placed in the exhibition room of the office. And he considered himself deeply injured when his request was refused.

Even the puckery persimmon has intruded itself, or rather its *seeds* upon the fertile brain of a southern inventor. Most any person enjoys a good cup of amber coffee, and as a natural sequence a patent has been issued to a citizen of Georgia for a new article of coffee, consisting of *roasted persimmon seeds*.

And for the convenience of those "young men" who are unequal to the effort required to carry a cane and an eye-glass at the same time, a "down-east Yankee" has combined these two articles into one, the eye glass being skillfully set in the handle of a cane.

We also have what might be termed a *poetic* inventor. For a model of a safety watch pocket in the Patent Office, has on it this amusing inscription, "He that hath a watch, two things must do, pocket his watch, and watch his pocket too."

By means of a new invention, lately patented, a woman while enjoying a rock in her rocking-chair, churns the golden butter and rocks the cradle wherein reposes her slumbering babe.

Even a curious dream has, in at least *one* instance, been the *medium* through which a new and valuable invention has been imparted to mankind. A lady, the wife of a western Union General who was killed in our late civil war, while sojourning in New York city a few years ago, and who had no mechanical knowledge or experience whatever, dreamt one night that she invented a lock. She awoke, struck a light, and going to her wash-stand took her cake of toilet soap and proceeded to form one as she saw it in her dream, and using no other tool than an ivory paper-cutter that happened to be at hand. In the morning she sent for a model maker and had a lock made after her description of the dream and her crude model. She obtained a patent, and it is said that the U. S. Seal Lock Company manufactured and sold them, she receiving a handsome royalty.

Such an ordinary article as the umbrella has been subjected to the whims and fancies of enthusiastic inventors. Upwards of a quarter of a century ago, an umbrella was invented for people that suffered with chilly hands, which had a curious little heating apparatus in its handle. Another one is arranged with a gun, a fishing-rod, and a pipe. To another inventor we are greatly indebted for an umbrella whose hollow handle is furnished with a pistol, bullets and powder, a telescope, pen, ink, paper, and pencil, and a small knife. Another one invented only a short time since, had a handle that could be unscrewed, so that on removing the handle and putting it in the pocket, the owner might leave the canopy portion in the hall with an agreeable *confidence* that he would *find it* again, as but very *few* persons would care to *borrow* a handleless umbrella. And still another umbrella may be used with equal effect against the rain, or one's natural enemies, as it is fitted with a spear, and may be used as a bayonet.

The novelty *par excellence*, in the shape of inventions designed for the instruction of our children, is the "educational balloon," patented by a Washington, D. C., man the past year; and which is calculated to amuse and entertain our "young America," as well as to instruct. Friend Hite says:—

"The object is to produce a globe which shall be of ready construction, of comparatively small cost, and which shall be made of material which is quite durable, thereby particularly adapting it for use by small children; and, furthermore, the object of the invention is to produce a globe \* \* \* which shall be capable of

presentation to young children in such an attractive form as to interest, amuse, and at the same time instruct them.



THE EDUCATIONAL BALLOON.

"With these objects in view my invention resides, essentially, in a collapsible globe consisting of a single shell made of strong \* \* \* elastic material provided directly upon its surface, by printing, painting, or the like, with geographical, astronomical or other instructive delineations, the shell to be distended by \* \* \* some æriform fluid lighter than air, whereby the globe will be buoyant, in the nature of a balloon."

By means of the attached cord the balloon is permitted to rise a suitable height in the air, whereby a child can readily, and in a

pleasurable way, study geography, astronomy, etc.; and without undue fatigue. The fair maid represented in the engraving, is out in the open air, studying with apparent enjoyment the representation of the "world" set forth upon the surface of the captive "educational balloon" swaying above her. Summed up, it is a veritable *novelty* in the educational-amusement line. Children want it,—in fact *cry* for it,—and are not truly happy until they possess it; so I presume.

Most everybody carries a pocket-book, yet how many individuals are there who are possessors of the "patent pocket-book revolver?" It was patented about the year 1877. This is an ingenious combination in which the frame of a pocket-book, a cigar-case and a revolver are united. The immense *advantage* derived from having such a pocket article about one's person will be *readily* perceived, as it forms a convenient mode of carrying a revolver for your protection, especially when attacked, as it can be taken out of your pocket and *fired* at a highwayman when *pretending* to hand him your pocket book.

We also have a new process for manufacturing hen's eggs from inexpensive materials, and which it is *rumored* now forms quite an industry in San Francisco, California. The albumen is imitated by a mixture of sulphur, carbon, and fatty matter, obtained from the slaughter houses, and rendered sticky with mucilage. The yolk is made of blood, phosphate of lime, magnesia, muriate of ammonia, oleic and margaric acids, and covered with chrome yellow. The shells are shaped by a blow-pipe from a mass of gypsum, carbonate of lime and oxide of iron. After the shells are blown, the albumen is forced in through a hole in the small end, and sticks to the sides, then the yolk is added, and after being covered with more of the albumen mixture, the hole is sealed with cement. The complete egg is then "rubbed pretty smooth and laid aside for packing." It is asserted that many barrels of these eggs have been already shipped eastward for consumption.

One of the most *singular* and *curious* inventions out, in the shape of a cat, is that shown in the patent granted September 16, 1884, to a resident of South Lima, New York. And as there is a *possibility* that this newly invented "Illuminated Cat" may have a tendency to supplant the "living puss" in its time memorial avocation of ridding one's premises of rats and mice, the invention *deserves* particular notice. The inventor's own statement of what he calls "a new and useful Illuminating Device for Frightening

Rats and Mice," is so very apt and descriptive, that I find it impossible to refrain from quoting the essential portions. He says: "This invention relates to a new, useful and ornamental illuminated device for frightening and exterminating rats and mice *without* the use of deadly poisons." "Referring to the drawings it will be seen that I have shown the figure of a cat cut out of card-board and *painted* to present an attractive appearance, the cat being shown in a sitting posture, with its head turned toward the right, and its eyes directed toward and watching an object near by. Over this painted figure I apply several coats of illuminating paint, so that it will *shine in the dark*, and then I *perfume* the figure with oil of peppermint, which is obnoxious to rats and mice, and will serve as an exterminator. The eyes of the cat are coated with a thick coat of phosphorous, so as to shine out with more brilliancy than the body of the figure. To the back of the figure is attached a flap so as to support the figure in an upright position." In dwelling upon the operation and advantages of his invention, the enthusiastic and wide-awake inventor has this to say in behalf of his painted card-board puss: "As a *parlor ornament*, the device serves two functions, since it will frighten away rats and mice and forms a useful and *attractive* article to place on the mantle-piece or stand. It is also useful to place on the window-sill facing the window, so as to shine through the same, and be seen in the dark. It can also be placed in the pantry adjacent to the rat-hole, or near the parts traversed by the rats or mice, and by the peculiar odor with which the figure is permeated act as an effectual exterminator.

Among ministers there is quite a difference in height. Some are exceedingly tall, others correspondingly short, and others about "half-and-half." Permitting short clergymen to serve and preach in the same denomination with tall ones, has its disadvantages. In our churches the pulpit is *naturally* an imposing and important article of church furniture, and are generally adapted to the *height* of the *regular* occupant; therefore, when a short and tall minister exchange pulpits, each is quite certain to meet with difficulties. The short minister can hardly get his chin *above* the top of his brother clergyman's pulpit, while the tall minister is in *danger* of losing his balance and falling over the front of the reading desk, to the surprise of the deacons and congregation. Until recently, the only way of overcoming this difficulty, and *reconciling* the pulpits and the preachers, has been to build pulpits so that they would nicely accommodate a "six footer," and have them provided with

large foot-stools, by the aid of which short ministers could be *raised* to a higher level. But this plan was *not* a very satisfactory one, for sometimes it worked well, and sometimes not. A sexton who has on a certain Sunday removed the foot-stool to accommodate a tall minister, very often *forgets* to replace it the succeeding Sunday for the benefit of the *short* dominie. Then again, a foot-stool affords a somewhat insecure support for an earnest wide-awake preacher, for he is likely in the fervor of his remarks to inadvertently step backward a trifle *too* far, thus losing his balance, and very suddenly disappearing from the view of the congregation. Moreover, a very tall preacher with a large degree of fervor and enthusiasm in his nature, has oftentimes forgotten that the foot-stool was not *essential* to him, and has thus mounted the stool, and preached with the *pulpit top* of the desk in the neighborhood of his *knees*—a state of things that is almost certain to cause a *smile* upon the faces of the younger portion of the congregation.

Here, then, was an opportunity for some genius to invent a pulpit that would be suitable for any and every dominie, be he short or tall.

An ingenious citizen of the “Prairie State” grappled with the problem, and concluded that it was completely solved by his “adjustable spring pulpit”—an invention designed to entirely obviate the great disadvantages resulting from the difference in height of both pulpits and ministers—which was in reality a reading desk with the outward appearance of a pulpit. The inventor’s idea was to place the pulpit upon a cylindrical post, said post to pass through the floor of a church edifice and rest upon a stout coiled spring situated in the basement. The device was so constructed that by pressing a metal button inserted in the platform, on which the minister would stand while preaching, the “adjustable pulpit” would be *raised by the spring* to any height desired. Its upward movement could be promptly arrested at any point desired by simply pressing another button, and thus every dominie, regardless of height, could use a pulpit that would *fit him to a T*. Whenever the “adjustable spring pulpit” was operated according to the inventor’s directions, everything worked nicely, and pastors and flocks cheerfully recommended it “as giving perfect satisfaction.”

An old English proverb reads that, “Ignorance is the parent of many injuries;” and the dominie who kindly volunteered to occupy the pulpit of a meeting-house in the inventor’s own town, where the congregation were without a settled pastor, and depended upon

different clergymen to fill the pulpit, must have fully realized from actual experience the *correctness* of said proverb. It was the sexton's custom to mentally "take the measure" of every fresh "supply," and then, before the commencement of services to adjust the pulpit to *fit* the new-comer. Now, it happened, however, that upon this particular Sunday the sexton was indisposed, and could not attend to his usual duties. The previous Sunday the pulpit had been adjusted for a short minister, and as it had not been changed, the last "supply" found it inconveniently *low*, as he measured in his *stockings* fully six feet in height.

He was a fervent and enthusiastic man, thoroughly devoted to his labors, and consequently would not let the inconvenient height of the reading-desk annoy him in the least. He preached with vigor and eloquence. Just at the moment that he was leaning forward over the desk and shaking his hand to emphasize a certain sentence, he accidentally *stepped on the button*, and to the *astonishment* of the congregation, the pulpit *shot skywards* carrying him with it, a distance of several feet above the platform, when it stopped with great suddenness. He was soon released from his predicament and left the edifice with a very poor opinion of inventions in general, and the "adjustable spring pulpit" in particular.

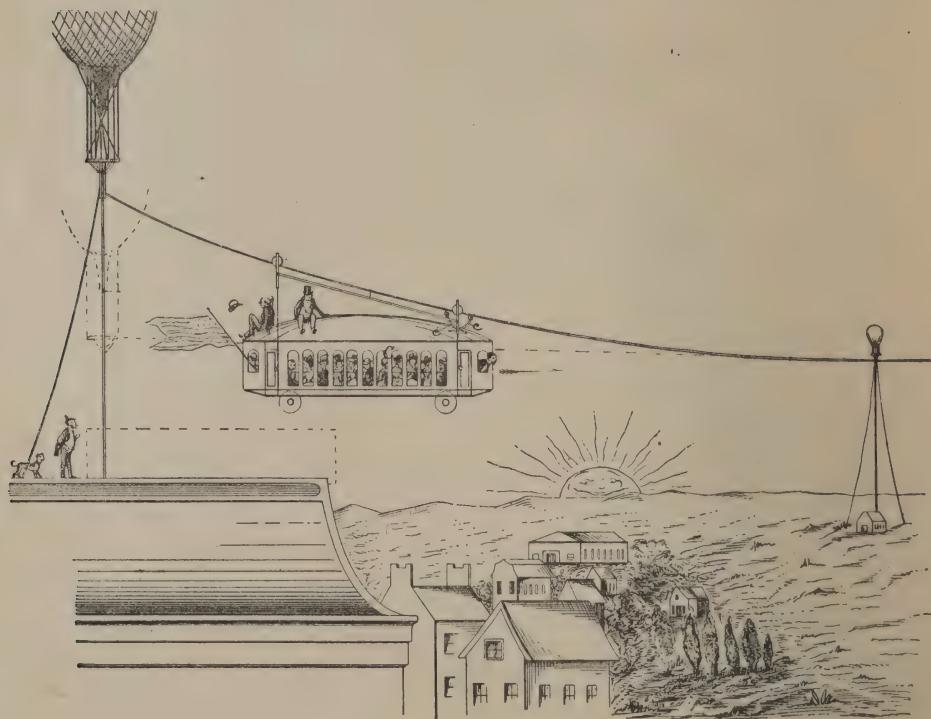
Yet had the dominie been posted beforehand regarding the workings of the pulpit, he could have seen that it was properly adjusted to his height, and would also have been very careful as to where he stepped, consequently the sexton was greatly to blame for the dominie's unpleasant experience.

The following day the "A. S. P." was taken down and removed from the "meeting-house," and, what bid fair to become an exceedingly popular invention seems to be a complete failure, at *any rate* such is the opinion of the "brethren" who assemble in a certain "meeting-house" as well as *one* particular "supply."

An Aerial Railway and Car, patented in 1885, by a Mr. Morrison, of Buffalo, N. Y., certainly takes the lead in *unique* features over all other cable railways; and that his invention is adjudged by the Patent Office to be *entirely novel*, is shown from the fact that, his letters-patent broadly protect him in "an aerial railway consisting of a continuous cable suspended at intervals from balloons anchored to the earth."

This invention, which may with perfect propriety be termed the "wonderful balloon railway," relates to means of transportation; and it consists in an aerial railway constructed of a wire cable

supported at intervals by balloons anchored to the earth, upon which cable is suspended a car, which is caused to travel on the cable by its own *gravity*, for which purpose the balloons are connected by their anchor-ropes with winding apparatus at each station, by which said balloons may be raised or lowered to give to the cable the proper inclination to cause the car to travel from one station to the next. Each of the landing stations comprise a high build-



WONDERFUL BALLOON RAILWAY.

ing with proper landing surface, adapted to receive the car, whereby, when the car is loaded with passengers, (or freight), it rests upon the top of the landing platform on the station, as shown by dotted lines at the left of the engraving; and when it is ready to be dispatched the balloon at this station is allowed to rise a suitable distance by unwinding its anchor rope from a windlass below, thus causing the car and balloon to rise from the position shown in dotted lines on the left to the position shown in full lines, which causes the cable to be thrown in an inclined position, which compels

the car to travel by its gravity to the next station or balloon on the road. As soon as the car passes the balloon there, the anchor-rope is unwound and this balloon allowed to ascend, thus throwing the next section of cable into an inclined position, thereby forwarding the car along to a succeeding station. The balloons are prevented from being swayed by the winds, by means of guy-ropes attached to the balloon and anchored to the earth in proximity to the anchor-rope, and adapted to wind and unwind with said anchor-rope. At the roof of the car is constructed a gas-compartment, which, being filled with gas, overcomes by its buoyancy a part of the gravity of the car. The speed of travel of the car is regulated by peculiarly arranged brakes. Also, the car is furnished with wheels to enable it to smoothly move off from and onto its landing platform.

Who, after looking at the sketch, would not long for a trip on the "balloon railway," when viewing the apparent enjoyment of the passengers in the car, with the possible exception of the old fellow on the roof, whose tile has suddenly started after the stars and stripes; and even the man with his dog, on the landing station, seem sorrowful that they are not on board; while the sun arising in the east, smiles genially at the novel scene spread forth before him.

## CHAPTER III.

**I**N a certain New England town, there resides an inventor who appears to be somewhat averse to noise, at any rate the *melodious*(?) noise of snorers; for he has invented an article which he truly thinks will bring *him* both fame and fortune. He has christened it "The Perfection Snore Cure Apparatus." It is made of a piece of strong wire, bent in the shape of a double hair-pin. On one end is pivoted a small wheel, somewhat resembling a child's pin-wheel. The shape of the wire is such that it can readily be attached to one's upper teeth, whereby the pin-wheel is brought in close proximity to the nose and mouth. When the snorer starts his snoring, then the wheel begins revolving, and the points of the wheel's rays, which have sharp needle-pointed ends, whirl rapidly round, *tickling* the snorer's *nose* and thus causing him to desist.

Patents on horse-tail holders are not at all uncommon, but the "Adjustable False Tail for Horses," invented by a citizen of the "Nutmeg State," is something out of the usual line. It is claimed that this tail will puzzle and mystify the keenest critics of horse-flesh. The top of this "adjustable tail" fits perfectly and firmly, without any apparent joint or ridge, and the tail proper is made of long, flowing, coal-black Chinese or Japanese hair. By the use of this novel device a horse with a banged or stumped tail can be made to *assume* the appearance of a noble Hambletonian with a magnificent tail sweeping the very ground.

That old and familiar saying: "The early bird catches the worm" is *not* followed, either literally or figuratively by many persons, for it does seem *so agreeable* to a large number of our population to allow their slumbers to continue until long after the sun has risen. There are also many well meaning individuals who

are exceedingly anxious to be "up with the lark" in the morning, who lack the faculty of awakening as early as they wish. Yet they need not despair any longer, for they have *found a friend* in a certain kind hearted inventor, who has invented and recently patented what may be termed the "Automatic Awakener," whereby the "sleepy-heads" can be aroused early in the morning, and thus *catch* the worm of which they *may* have been dreaming. This device for waking people from sleep, consists in the automatic releasing of a rope at a given hour, said rope when thus released, causing the descent of a frame, from which are suspended cords to the ends of which are secured light wooden blocks, resembling in appearance an old-fashioned potato-masher; and which coming in sudden contact with one's body, causes an instant awakening.

Many of our Western States and Territories, are subject to terrific wind storms or cyclones, which in many instances cause immense damage and great loss of life, and with such resistless force do they travel, that buildings are not only leveled to the ground, and the debris carried here and there, but in many cases buildings are lifted up bodily from their foundations, and sent whirling through space, to a great distance. Usually when aware of the approach of a cyclone, the inhabitants of a dwelling seek refuge in the cellar, as being the safest place, yet even then the family were quite likely to see the building over their heads, suddenly rise up and start for a journey in the air, or else meet with the more serious mishap of having the broken timbers come tearing down upon their defenseless heads.

But *at last* an inventor has appeared who claims to have an invention that will *banish* fear and terror from the hearts of the residents of cyclone-breeding regions. This benefactor, resides at Lincoln, Kansas, and his patent is dated the 14th of December, 1886. He calls his invention "Land Anchors," and states that his device relates to improved means for securing frame buildings or other light structures to their foundations, so as to prevent the same being removed therefrom by wind storms, cyclones or blizzards; and that it consists in expansible anchors, that are sunk at intervals in the ground surrounding a building, to any desired depth. To the anchors, iron rods are attached, which are of sufficient length to extend above the surface of the ground. To the rods are secured metallic straps, which pass up and over the building, and are provided with means for tightening the same when necessary, whereby the structure is held firmly down to its founda-

tion; and while cyclones may rage and roar, lifting less fortunate edifices from their foundations, the occupants of "the anchored house," can *calmly* sit at their windows, enjoying the mutterings of the gale, and laughing it in the face; while the non-believers in the patent anchor, will behold their own homes taking *flying leaps* into mid-air, while their household effects will be scattered hither and thither for miles around.



THE ANCHORED HOUSE.

One of the most *remarkable* cases on record in connection with the grant of a "curious patent," is that furnished by what may be well termed, "the Patent on a Chalk-mark;" for it clearly shows that *pluck* and continued *perseverance* will often insure *success*; when despair or despondency would result in certain defeat, even though it be "*only a chalk-mark*."

This "*true story*" is interesting as well as instructive, and is as follows:—

On a certain Autumnal day, in the year 1875, a Mr. Strong and his "better-half" residing in the state of Alabama, filed in the U. S. Patent Office an application for a patent on an "Ant Guard," yet, strange as it may appear, at about the very same time, an inventive genius rejoicing in the name of Cruikshank, suddenly appeared on the horizon, claiming that it was his *own* fertile brain that had first conceived this wonderful "ant guard," and that consequently, *he* was the real inventor,—*not the Strongs'*.

The petition of Mr. Strong and wife, which by the way was rather funny, set forth that they had put their *two minds together* and had invented an “ant guard,” the most wonderful thing ever heard of; and which they went on to describe at some length.

They claimed that it was patentable, as it was entirely new, and moreover very useful. Their invention consisted “in combining with the legs of tables, refrigerators, etc., a flange made concave upon its under side, and having a *coating of chalk* applied thereto,” and by which it was claimed the approach of ants, &c., were effectually stopped. Mr. Strong asserted, and Mrs. S. swore it was true, that an ant *cannot* walk over a chalk mark, “as the grains of chalk will *give way* or become detached, thus preventing the further progress of the insect.” For it is a veritable fact that *chalk makes an ant's legs slip up*, as soaping a track prevents a locomotive from starting. There they were, John J. and Kate M. Strong, and Savannah Cruikshank, in a figurative sense all on the “anxious seat,” each party confident that they were the real inventors, and eager and anxious for a patent on “the chalk-marked flange.” Yet the Patent Office could grant a patent to but *one* of them, and that one, the party who *first* conceived the idea and its practical development. Consequently both parties attempted to substantiate their claim to the inventorship of the valuable(?) “ant guard” by the testimony of witnesses, &c.

The Primary Examiner decided in favor of Cruikshank; that of course did not suit Mr. and Mrs. Strong, consequently they appealed to the Board of Examiners-in-Chief, who decided in favor of the Strongs. But Mr. Cruikshank could hardly accept *that* as “gospel truth,” and accordingly he appealed to the Commissioner of Patents asking for a decision in his favor. But, a storm was brewing which would tend to shatter and blast the fondest hopes of all the aspirants for the patent on an “Ant Guard,” for the “Honorable” Commissioner, completely *ignoring* the claims of either of them so far as the question of *inventorship* was concerned, rejected both applications for the following reasons:—“The peculiar property possessed by chalk, rendering it an impassible barrier to the march of ants, is well known.” “The practice among boys for sport, and among house wives for more practical purposes, of drawing chalk-lines, to prevent the passage of ants, is common.” “The use of concave flanges on corn-cribs, trees, &c., to prevent the ascent of insects, is old.” “The only novelty that can be claimed for the present alleged invention is the fact that protection

is afforded by the flange to the chalk; but any intelligent person, desiring to put chalk on a table-leg or chair for the purpose specified, would naturally put it on at a place that would best protect it from being rubbed."

It would *appear* that Mr. C. after perusing this last decision, "threw up the sponge" in despair.

But our worthy friends, Mr. and Mrs. S. were even now not altogether discouraged, and evidently believing that "while there's life there's hope," they appealed to the highest tribunal, the Supreme Court of the District of Columbia, for a patent on their cunning little ant guard.

A pleasant surprise was in store for this "Strong united couple," for, in the early part of the year 1880, the Honorable Court rendered a decision in which they held:—

"We are of the opinion that a concave flange, arranged on the leg of a table or similar article and coated on the under side with chalk," \* \* \* is a novel and patentable invention." "It may be admitted, as stated in the Commissioner's decision that the use of concave flanges on corn-cribs, &c., to prevent the ascent of insects is old." "It may also be admitted that the peculiar property possessed by chalk, making it a barrier to the march of ants was well known and described \* \* \* prior to the invention of appellants, as they do not broadly claim to have invented a concave flange, nor do they claim to have been the first to discover this alleged property of chalk." "In this case the inventive faculty was exercised by the Strongs in *combining* the flange and the chalk in such a relation to each other as to produce a *new* and *useful* result, and it is well settled that such a combination of old elements is patentable." "The gist of the invention \* \* \* consists in placing the chalk on the *under side* of a flange, where it is not only protected from exterior objects, but prevents the passage of insects in a more effectual and satisfactory manner than it otherwise would." "The decision of the Commissioner \* \* \* is reversed, and it is ordered that the Commissioner of Patents, issue a Patent to the said J. J. and K. M. Strong."

At last, our worthy friends were to receive their reward, and this wonderful "chalk-marked flange" which would prove a perfect boon and blessing to every housewife whose sweets and dainties had heretofore succumbed to the avarice of ants and other insects, was to enjoy the high honor of being marked—"patented." And on the 19th day of October, 1880, (nearly *five years* from the

day they filed their application) they received the long wished-for Patent, entitling them to *all* the emoluments and glory that is conferred by it.

Where is there a young lady that would not prize a pretty dimple on her cheek? A few "fortunate ones" possess that acme of attractiveness, while a large majority of the fair sex do not. But now, thanks to some sympathetic personage, the very *latest* wrinkle out—an *artificial dimple*,—has made its appearance, and, as it has *not* been patented, any of the gentler sex who may desire, have a perfect right to utilize it.

The manner of manufacturing a "pretty little dimple" on one's cheek or chin, is, according to the originator, (doubtless a woman), as follows:—

1st. Smear a small spot on the cheek or chin with colorless shellac varnish mixed with glue. 2nd. Take a pencil or pen-holder (a broom-stick would be too large) and press the flesh with the point, holding it there until the substance on the face becomes dry and hard. 3d. The stiffened indentation thus retains the exact shape of a dimple, and a little face-powder dusted carefully over the "artificial dimple" will completely *conceal* the varnish-glue compound. 4th. Some care must be observed in smiling too *suddenly*, lest the dimple be broken. 5th. But, with ordinary gentle usage, it will retain its pretty shape a whole evening, if not longer. While this dimple process is applicable to those whose faces comprise a soft, velvety or pulpy surface, as then a very deceptive dimple can be produced; it is *not* so available for thin or bony faces, nor where the skin is very thick and unyielding.

Among other recent triumphs of mind over matter, is the invention of an *odd device* termed the "Nose-improver," the inventor of which, it is said, has already made quite a snug little fortune out of it. It will not only straighten crooked noses, but will reduce the pug nose to a more elongated form, impart a stylish Grecian bend to vulgar noses, as well as transform the common-place idiotic nose into a thing of exquisite beauty. There are so *many* people that have noses whose shapes do *not* please even their owners or their owners' friends, and it is this class to whom the "nose-improver" commends itself especially. This machine is made of metal; in shape greatly resembling a small shell, and formed in two parts, which are connected together by a hinge. Its interior shape is that of a perfectly-formed nose, and of the style or type which the wearer desires to obtain. The "nose-improver" is

applied before retiring for the night. First, the nose is well bathed in warm water, then it is greased with olive-oil, glycerine or similar substances until it is thoroughly softened. Then the "improver" is attached, the sides clasped tightly together, and it is then your *close companion* for the night. On arising it is disengaged and the nose tenderly washed in cold water. This process is at first somewhat painful to the wearer, but after a few applications there will be no trouble on that score. In about four weeks the nose begins to take on its new shape, and at the end of a couple of months you make your appearance with a "bran new nose." When you become tired of the particular style you manufactured, you can go through the same process again, and come out with an entirely different style; for the nose being nothing more or less than a piece of *cartilage* it is comparatively easy to *change its shape*.

"Hanging on the garden gate" is a custom greatly in vogue among numerous "young men and maidens fair," yet every pleasure has its drawback, and the "garden gate business" is certainly no exception to this almost universal law. For how often it happens that when a lover is engaged in deep and earnest conversation with "his girl," that unexpectedly, and almost without warning, the father or "big brother" approacheth with a frown on his face and his boots ready for action, and by a vigorous assault upon the aforesaid lover causes confusion worse confounded. To remedy or overcome, to a great extent, this serious drawback to a lover's happiness, a certain inventor has invented the "Lovers' Own Gate," which is a much-needed improvement on the ordinary gate—so far as lovers are concerned, at least. The upper bars of this "lovers' gate" can be instantly raised or lowered by merely pressing on a button. Moreover, the gate is so made that it will swing in either direction, and can be opened or shut in a second of time. The immense value of this last mentioned feature is self-apparent. For the purpose of illustration, we will imagine that a lover of medium size has *reduced* the height of the gate to suit his stature, and leaning over the same, is busily occupied in visiting his inamorata, when suddenly her father is discerned with hasty strides advancing up the street, while the baleful light within his optics bodes anything but happiness to the "young man." Yet he is not greatly alarmed, for he leisurely opens the gate and enters the yard, and closes it again, secures it with a spring lock, and *raises* the upper bars to their *highest position*. The father arriving in breathless haste, unexpectedly finds himself barred out, for, he is

unable to *jump over* the high gate, neither is he able to open it without a key, and consequently is compelled to witness the young man making his escape through the back yard, while the daughter retires to her room with a sick headache, and meanwhile the father is laboriously clambering over the gate. Of course, the father when requested by his dutiful daughter to buy a new style of gate, and which she desired to *select herself*, was *not* aware of the "lovers' scheme" that lay behind it.

"Shaving one's self with such an expensive and dangerous implement as a razor, is all *nonsense*." Such is the opinion of a certain inventor who has recently discovered a new, and as *he* terms it, "perfect substitute for a razor." He says, "The proper way to keep down the human stubble is to procure two pieces of pumice-stone, cubes of about one and a half inches. Keep them smooth and clean by rubbing their faces together; and then taking one in each hand, rub them over your *own* face; that is all; no shaving-soap, no brush, no razor, no strap, no looking-glass, and no hot water. By using this device there will be very little *danger* of your committing *suicide* with a razor, and no necessity of becoming *excited*, as some men with hard beards do, when their razors do not cut smoothly."

Decidedly, without *any* exception whatever, the most unique and novel means for sending an individual into the "Land of Nod," is the device invented and patented, for that very laudable purpose, by a woman, a resident of "Gotham," on March 10th, 1885, and which the fair inventor terms,—a new and useful device for "Inducing Sleep." In explaining the merits, objects and advantages of her invention, she gives expression to her views, as follows:—

"My invention relates to a new and useful instrument whereby limited pressure may be applied to the arteries and veins of the neck which convey the blood to and from the head, with the object of modifying the flow, and restoring quiet to the brain, in persons suffering from wakefulness or insomnia. In such cases the sufferer is generally under abnormal nervous excitement from some cause—as, for instance, intense or prolonged application to business, over-study, great anxiety, protracted cares, and worries of the mind. This nervous excitement quickens the action of the heart, and an augmented flow of blood to the brain follows, the recumbent position of the sufferer facilitating this result. The vessels of the neck being elastic, are distended to accommodate the

enlarged current, which further excites the brain and renders sleep impossible.

"The object of this instrument is to slightly modify this flow of blood to the head, and thereby reduce the activity of the brain in order that sleep may ensue.

"I have experimented with different degrees of pressure upon the arteries and veins of the neck, and find that while pressure applied without proper limit and adjustment only, excites the sufferer additionally, by the use of this instrument the proper pressure is obtained to control the undesirable flow of blood above referred to, and very soon after this takes place the nervous system becomes soothed and quieted, and sleep follows almost immediately, and sleep thus obtained refreshes and builds up the system and the nervous organization, there being no after effects, as in the use of narcotics or opiates.

"It has been found that the desired result is attainable in from ten to twenty minutes without ill effect of any kind, where the surrounding conditions are not unfavorable, and the rules for application are properly observed.

"The instrument consists of a collar-like band, made of rubber, metal, or other suitable substance, which in use encircles, or partly encircles, the neck. On its inner side, fastened at its upper end by rivets, screws, or in any other suitable manner, is a flexible spring which is preferably covered and padded, as usual, in such instruments. The reduced end of a stud plays in a slot cut through the band, and is confined at any desired part of the slot by the set-screw, which enters the end of the stud. The inner end of the stud is provided with a thumb screw, set on a little threaded spindle, which enters the end of the stud adjacent to the spring. By changing the location of the stud in the slot the elasticity of the spring will be increased or diminished, as desired, and by running the thumb-screw out or in the spring will be adjusted relative to the band, thus adapting it to necks of different sizes. The forward end of the band is formed into a handle or lever, against which the user gently presses with one hand, and thus causes the spring to bear upon the arteries and veins of the neck. To the other end of the band is attached a light leather strap, to be held in one hand to retain the instrument in position while the other hand presses upon the lever.

"The operation is as follows:—The band is placed around the neck, preferably with the right hand holding the lever in such

manner that the padded spring rests with light pressure against the flesh beneath the jaw and about mid-way between the ear and chin. The strap on the opposite side is intended merely to keep the instrument from slipping and retain it in position. The pressure upon the handle causes the spring to bear against the neck. Care should be exercised that the pressure be not sufficient to produce discomfort, but simply to restrict the too abundant flow of blood to the head. The user will in a very few minutes ascertain the requisite pressure. The nice adjustment of the spring will aid in this."

This presumable benefactress to her race, appears to have a preference in regard to which side of the neck her device should be placed, as she says:—

"I prefer that the application of the instrument should be to the right side of the neck; but it may be used either on the right or on the left side, as preferred."

How successful the inventoress of this novel "sleep-forcing" apparatus has been in introducing her invention into public use, the author is *not* advised, but it would seem that her unique device fairly deserves a *trial* from all who are afflicted with insomnia or wakefulness, and, *especially* for those of the weaker (?) sex, who (presumably from sleeplessness,) devote a large portion of the hours which should be devoted to sleep, to giving "curtain lectures" to their husbands. Certainly, every husband thus abused, should, for the sake of quietude and refreshing sleep, both for himself and wife, *try the effect* of the "sleep-inducer" upon *her*.

The ordinary fare box, usually secured in the front portion of the interior of those street-cars popularly known as "bob-tail cars," to which the driver of the car, in addition to his duties as driver, has to see that all the passengers pay, and also make change when requested, is an accustomed sight to the denizens of all our cities and larger towns.

However, two certain observant inventors', have invented (and recently protected by Letters Patent), what they term an "Automatic Combined Fare and Change Box," designed for street cars and other public conveyances, which is such a veritable novelty, that it must attract *especial* notice wherever introduced.

This novel cash-box and money-changing device (lately on exhibition in one of our southern cities), in external appearance somewhat resembles the fare-box in common use, but aside from that differs very materially, as it not only serves as a receptacle for the customary nickels deposited therein by the passengers, but its main and *important* feature is, that it *makes change*.

The box is provided with two openings on its top, one being for the reception of fares and the other for the making of change. To illustrate its operation, we will suppose, that a certain passenger desirous of paying his fare, should offer a silver dollar to be changed. Under the old "regime" he would hand it to the driver, but now, he drops it into the box through an opening marked "change." That dollar will disappear into some inner hidden recess, yet almost simultaneously with its disappearance, a half dollar, a quarter dollar, two dimes, and a nickel would appear in a small pocket or basin within easy reach of said passenger's hand. Consequently he would get his change and be enabled to drop his nickel into the apperature marked "fares." The deposit of a half dollar in the opening marked "change" would result in the appearance of a quarter dollar, two dimes and a nickel; while, should a quarter dollar be tendered, the ingenious mechanism would send forth just two dimes and one nickel. In each and every case the requisite amount of change being expeditiously furnished.

Even were a nickel to be dropped into the change hopper through mistake, it would do no harm, neither would it disturb the interior mechanism of the device, as it would quickly appear in the basin, ready for the depositor, and, moreover serve as a *gentle reminder* that, although personally it did not desire to freeze onto the humble nickel, there was every reason to expect, that its brother apperature "fares" would be *most happy* to make a "permanent retainer" of it.

This automatic apparatus can not render change for greenbacks or other paper currency, as the principles of its operation depend entirely upon the relative weight and size of the coins which, on entering the box pass through orifices proportioned to their various sizes, and they then press upon certain levers which open other orifices, and set free and in motion corresponding coins that are to come forth as change.

On the side of the box, protected by coverings of glass, are four dial plates provided with hands or pointers that mark the amounts of money in the change department. One dial plate reveals the number of half dollars, another gives the number of quarters, a third shows the dimes, and the fourth the nickels.

Prior to the departure of the car on its trip, the change department of the box must be supplied with the required number of coins of the various denominations mentioned, and as change is

made, and these are successively dropped out, others must be put in their places. As the dial plates show exactly what is on hand, there is no necessity of the Superintendent or his subordinate examining the interior of the automatic mechanism to determine that.

Summed up, this novel cash box appears to be very ingenious, and from the information attainable appears to operate with entire accuracy and great promptitude, and moreover dispenses with the necessity of the driver of a car having to handle any of the Company's money. And while continuous actual use will be essential to fully prove the practical value of this wonderful device, indications appear to warrant the assumption of the "Combined Fare Receiver and Money Changer" proving a complete success.

Assuredly, the inventors' of this serviceable apparatus are deserving of the thanks and gratitude of the habitues of all "bob-tail cars" which adopt it, for it will relieve them of considerable bother and annoyance, to say the least.

Among various other novel inventions, the result of lofty flights of genius, we have the "double-barreled pistol boot-jack" (patented November 3d, 1885, by a resident of the Quaker City) which, although it simply *resembles* in external appearance a pistol, is, when arranged for use by a boot-wearing individual, an *actual* boot-jack.

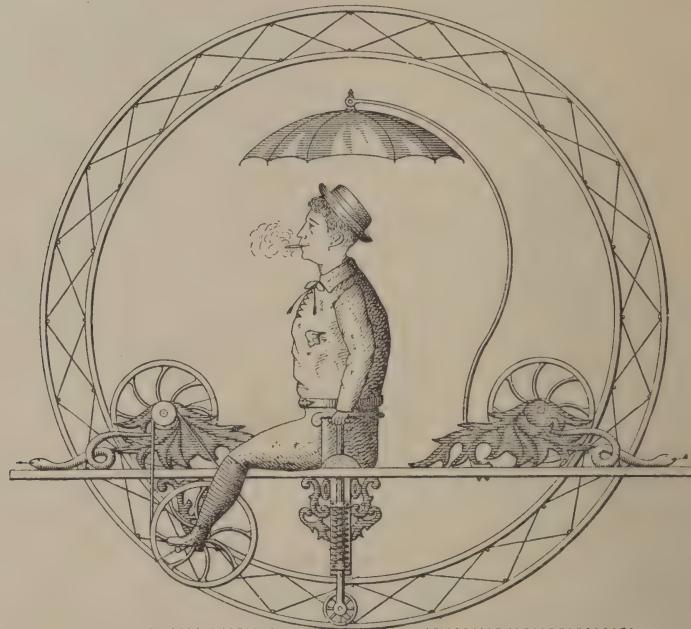
The boot-jack when in its normal or closed position has every appearance of being a bona fide death-dealing weapon, while, when it is desired to utilize it for pulling off one's boots, (it being unfolded,) makes a *very* respectable-looking "boot-puller."

The construction, as well as the preferred method of operating this "curious" implement, is about as follows,—slight variations or modifications being allowable, according to circumstances:

This convertible boot-jack, made in the form of a toy double-barreled pistol, consists of two members, hinged together by a hinge, each one consisting of a barrel and half-handle, and each provided with a leg, which, when unfolded forms the leg of the boot jack. One of the members has a lock provided with a trigger, hammer and nipple, while the other member has an opening or recess to receive and contain the hammer and nipple when the device is used to pull off one's boots.

The method of operation is simple. When not required for use as a boot-jack, it is placed in a man's hip pocket, or any other pocket convenient of access, whereby it answers the two-fold pur-

pose of always being “on hand,” as well as forming a very *handy* object to *point* at a highwayman, or other malefactor, attempting to disturb or molest the owner; for, although its construction is such as to be incapable of doing any one great bodily harm, its striking *resemblance* to a real pistol, would ordinarily *strike terror* to the heart of every villain—without shedding blood. While its value and utility, in its unfolded position, as a boot-jack, is self-apparent to even the dullest intellect.



AN ODD VEHICLE.

A One-Wheeled Vehicle or Unicycle, *devoid of spokes*, is the *odd* invention of a resident of New Jersey,—a Mr. Lose,—and which was patented in the year 1885.

It is operated from within, carries the passenger *inside*, and but one wheel rests on the ground. When a person takes the seat and works the treadles, the treadle-wheels will move upward, and, taking the position shown in the engraving, will revolve. The belt connecting the treadle-wheels and the driving-wheels, will cause the large driving-wheel to revolve, which, by *friction* with the inner rim of the largest wheel, (within which the individual is

seated,) forces *it* to revolve also, and the machine is thus in operation. The passenger remains stationary. This unicycle is easily balanced and can be used without fear of accident; and, by putting in a box-seat this curious vehicle would be well adapted for the use of the gentler sex. The inventor says that, instead of operating the unicycle by foot-power, either clock-work or steam-power may be utilized if desired, and, in case steam is to be employed, a small boiler may be placed under the platform, provided with a pipe to convey the steam to the inner rim of the largest wheel, which rim will have openings at regular intervals leading to cavities within the rim, or between the two rims. The steam from the pipe striking the opening in the rim must penetrate the cavity with a downward force sufficient to propel the unicycle. The "young gent" shown in the picture, appears to be enjoying himself hugely, and *bound* to fully get the *worth* of his money. A glance clearly shows that.

## CHAPTER IV.

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WE have luminous paint, luminous cats, match safes, name plates for doors, railway coaches, etc., and now there appears upon the scene what is *claimed* to be “one of the best things out” in the shape of a luminous device—a *luminous harness*. Most every body is aware how dangerous it is to suddenly and unexpectedly run afoul of a horse and buggy while perambulating leisurely along some country road upon a dark and cloudy night, whereby the well meaning, yet perhaps, unobserving pedestrian, may meet with a dangerous accident from sudden contact with said horse and vehicle. But now, the “luminous harness” obviates the aforesaid danger, and the pedestrian or driver of a rig can travel a road on a “pitch dark” night in comparative safety, provided owners of horses adopt this wonderful and unique device which is as follows: Luminous paint is thoroughly applied to all the prominent parts of the harness, such as the blinkers, collar, etc., and the result is that the very *darkest* horse when attired in these trappings is visible at night, and is said to resemble *chain lightning* as he plunges through the inky darkness.

To a Gainsville, Georgia, inventor, we are indebted for a novel counterpart of the New York and Brooklyn Suspension Bridge, on a limited scale. His model is *almost* as great a wonder as the Strasburg clock. For nearly one hundred days, from early morn till late at night, was he occupied upon his model before it reached completion. This bridge in width is four feet, in length thirty feet, and weighs nearly 800 pounds. Constantly crossing and recrossing it are some three hundred and fifty figures, representing men, women, drays, carriages, etc., while beneath the bridge is real water, upon the surface of which boats are moving to and fro, whereby the scene strikingly resembles the original bridge.

There are no trustworthy means for estimating the exact number of fires, from an incipient blaze to an extensive conflagration, which are directly attributable to petroleum or kerosene, and which are caused through gross carelessness or unavoidable accidents in its use; but there is no denying the fact that millions of dollars worth of property are annually destroyed from this very cause. Ordinarily, the first impulse of the majority of people is to *throw water* upon burning kerosene oil, but the oil, being *lighter* than the water, rises upon it, whereby the only result is to make the fire *spread* with far greater rapidity. But lo and behold, an inventive genius appears, who boldly *asserts* that *milk*, yes! m-i-l-k—MILK, will prove an effectual extinguisher, when all other means have failed. It may however, be fairly doubted whether the *well watered milk* that is too often dispensed by city milk men would answer, for our genius says *milk* should be used. The question also arises whether it would not be *well* to pour a small quantity of milk in our lamps on filling them, so that if they *should* happen to explode, or get broken by a fall, the milk will be *on hand*, ready to act at *once* and extinguish the flames *without* the necessity of looking for the milk pitcher, or waiting for the arrival of the milk man.

Blue paint has made a certain inventor wealthy. Who is there who has not observed that kerosene barrels are invariably painted blue? Yet how many know the reason thereof, or how it happened to come about. Many persons have doubtless imagined that it was put on to *look nice*. Not at all. It is not done to please the eye, but as a matter of utility, for it is done to prevent the petroleum or kerosene from leaking. Formerly, during a long journey by rail or a long ocean voyage, *half a barrel* or even *more* would *leak* through the pores of the wood and evaporate. A remedy was certainly needed, and just in the *nick of time* a certain observing individual set his wits to work and began studying some way of preventing that loss. He first painted a barrel blue on the outside and then filled it with water and allowed it to stand until it had soaked up all it would. Then the oil was put in. The water kept the oil from soaking in the wood, and the paint on the outside kept the water from coming out. *Novel idea.* Protected by his patent on his unique discovery, he sits in his office, with a self-satisfied or I-told-you-so expression upon his benign countenance, and calmly draws his royalty of one cent on every barrel made to hold kerosene oil for shipment. So I have been informed.

Bidding adieu to kerosene, blue paint and milk, we now come across an invention calculated to *interest* every parent desirous of more fully protecting their offspring in their slumbers. How many, many parents have put their baby in his little crib, and then themselves retired for a sound night's rest, only to be suddenly awakened in the small hours of the night by the sound of *something striking the floor* with a dull *thud*, and upon investigating the matter, discover their offspring lying helpless upon the floor, onto which he was precipitated from his crib, through restlessness or carelessness on his part. To obviate or at least greatly *lessen* said danger, two Mr. Keeps' have invented, and patented, a novel invention in electric alarms to be applied to children's cots, cribs or bedsteads, for the prevention of accidents due to the tendency in infants and children to leave their cribs. The alarm is attached to the crib in such a manner that any undue or dangerous movement of a child's body will be the means of immediately sounding a *terrific* and *blood-curdling alarm* upon said electric device, whereby the parents may be awakened in time to jump out of bed, hasten to the crib and quickly push "the apple of their eye" back into a proper and safe position, *saved* from a *fearful bump*. It is to be feared that the overwhelming *rush* by anxious parents for this "patent baby protector" will tax the capacity of the manufacturers to the utmost to fill their orders.

Ordinary envelopes are such a *common* article as to excite no attention whatever, yet a certain inventor who doubtless believed that there was *more* than one thing to which an envelope was applicable, invented and patented in 1885 some immense envelopes of entirely new design in which to insert—furniture. He claims that his "envelopes for packing furniture in," are of great value, as in shipment furniture thus enclosed will not get marred or scratched, and arrive at their destination in good shape every time.

Mention has been made in the preceding pages of various anti-snoring devices, and we now come across a device designed to accomplish the same object, but in an entirely different manner. This device, invented and patented by a Mr. Sullivan, October 22, 1872, is based upon the theory that *a person cannot snore while lying on his side*, but that there *is* great danger of his snoring if he *should* in his sleep *accidentally* happen to *turn over* onto his backbone. This enthusiastic inventor accordingly went to work and invented an apparatus designed to "prevent a person while asleep

from turning on his back," and which consists of "an arch of some hard material secured upon the back between the shoulder by means of straps about the waist and neck." It is easily seen that a person with such an appliance upon his back, would be compelled to lie upon one side or the other, as the arch would effectually prevent his rolling over onto his back. How large a demand this benefactor has had for his "Anti-turning, anti-snoring device" from chronic snorers, I am not informed, but it would seem that every snorer desirous of bettering his condition would at least give it a fair, impartial trial.

There have been several devices patented designed for automatically starting a fire in one's cook stove or range, but it was reserved to a Missouri inventor to develop and recently patent, one of the most ingenious "automatic fire kindlers" extant. It would seem that this device *must* prove a comfort and blessing to every housekeeper, for by its use the old-fashioned way of jumping out of a warm bed onto a cold floor, when the mercury in the thermometer is wrestling with the zero mark, to kindle the kitchen fire, is entirely done away with. This machine is of peculiar design and contains clock-work, greatly resembling a dynamiter in appearance,—yet it is not dangerous. It startles the beholder with a fiz, a flash, a burst of flame,—suggestive of great danger; but it will not explode. But one thing is *certain*, it will have more or less of a *dampening effect* on the matrimonial market, for single women will be more than blessed by it, as they will no longer be under the *necessity* of pining or wishing for a good-natured *husband* to start their fires for them, as *this* machine will do the work perfectly. All one has to do is to set the "automatic fire kindler" upon the stove-hearth, wind up the clock portion, and set the hands to any desired hour. When that time arrives a sulphur match is ignited at the adjacent end of a hollow metal tube, which is filled with chlorate of potassium and sugar, which flashes into a burning flame setting fire to a ball of asbestos saturated with turpentine, at the further end of the tube, thereby readily lighting a fire in the stove.

A "York State" inventor has lately come out with an invention which he claims will cause a complete revolution in the matter of fuel, and greatly cheapen the cost of cooking one's meals. To an ordinary cooking stove or range there is secured a novel attachment designed for a new process of heating. Two separate cans are provided, in one of which is kerosene oil and in the other

water, both of which fluids being fed through tubes into a peculiar system of pipes. The water passes through the pipes, and when it has become steam it mingles with the oil which joins it one drop at a time. The inventor says, "This mingling of the oil and steam forms hydro-carbon gas, which passes out through small holes in one of the pipes, and has only to be touched off with a match to make a roaring fire. The composition of this peculiar gaseous fuel consists of two-thirds water and one-third oil. Only forty drops of oil are used per minute, and eight gallons of oil will last about eighty hours, while the cost is comparatively nothing." When a fire is wanted in the morning all that one has to do is to scramble out of bed, *turn a valve* on the apparatus and then hasten back again to comfortably *lie* until there is a hot fire, which will be in a very few moments. Simply this and nothing more. While this invention has some very unique and valuable features, I am nevertheless inclined to the opinion that the "Automatic Fire Kindler" is in *one* respect at *least* the most desirable, for with that one need not jump out of bed *at all*, until the singing of the tea-kettle proclaims that a good rousing fire awaits him. The only accessory that seems to be needed in both cases, is an automatic cook,—regulated perhaps by clock-work. Who will ever invent one?

While there are quite a number of patented "toy savings-banks," still, the one two "York State" parties patented on November 16, 1886, serves as a *good* illustration of the unique and ingenious devices developed in *that* line of invention, and, which are designed to not only inculcate into "Young America" the habit of "saving their coins," but coincidentally affording them amusement as well.

The device alluded to, consists of a metallic toy savings-bank in which the coin-receptacle is surmounted by the figure of a man provided with certain movable parts and operating mechanism, whereby the coins are deposited in the money-receptacle by the operation of the movable portions of the individual. The base portion or money-box is provided on top with a satchel which receives the coins as they are deposited therein by the movable arm of the figure; said arm, when a coin is placed in its hand, swinging from its normal position over to the satchel. From the satchel the coins pass through a bottom opening into the coin chamber. The satchel automatically opens when a coin is to be received and closes after the entrance thereof.

The lower jaw of the individual is movable, and so arranged that it will *vibrate* for quite a while after the deposit of a coin by its possessor, thus giving the handsome(?) corpulent individual the appearance of *talking*. The mechanism of the figure is set in motion by the manipulation of a lever at a side of the coin-chamber. This contrivance is bound to amuse the young folks, as well as some of advanced years, but with young hearts.



A UNIQUE SAVINGS BANK.

The problem of *how* to escape from your grave in the *event* of being buried when apparently lifeless, or in a trance condition, so *worked* upon the mind of a Grand Rapids, Mich., man, that he finally invented a device especially designed for those who were so unfortunate as to be "planted" alive, and was what he termed a "Grave Escape." A miniature house was provided, having uprights secured at its four corners; also a coffin provided on each of its sides with air-receptacles secured thereto, and having communication with the interior of the coffin by means of rubber tubes. His idea was, that after the four uprights had been erected in the grave

already dug, until the floor of the house came on a level with the surface of the ground, the coffin containing the body was lowered, and the door of the hut locked, and the key dropped through an opening in the door. Then, when the unfortunate individual made the discovery that he was *alive*,—came out of his trance,—he was to seize either of the tubes and thus consume air from the receptacles attached thereto, lift the unfastened coffin-lid, and climb up a ladder connecting the grave with the hut, don a suit of clothes there awaiting him, open the door, and thence jog homeward to honor his bereaved family with a *surprise* party.

The device of another man consisted in connecting the head of a coffin with the atmosphere, by means of a metallic tube, provided with a bell at its upper end, which was rung by a cord passing through the tube and into the coffin.

The “Combined Bedstead and Alarm Clock” would be sure to awaken the *soundest* sleeper. The dropping of a bolt as the hour-hand reaches the appointed hour, lets loose a set of bars which holds the mattress in place, which, in turn, swings on central pivots and expeditiously propels the sleeper onto the floor at the exact moment that he desired to be awakened.

Quite a novel idea is the “Refrigerator Hat,” that is provided with a water-proof apartment in the top, which being filled with chunks of ice *must* keep the wearer’s head as cool as could be desired, and with no liability of getting sunstruck.

A hard-working miner of Wilkesbarre, Pa.,—James McGlynn, by name,—has, during his spare moments for nearly ten years past, amused himself and drove dull care away by constructing an elaborate and curious clock. This clock standing full nine feet high, is enclosed in a case of black walnut, handsomely carved, comprising in all 406 pieces of wood, all of which are finished to perfection. Curiously enough every one of these pieces were designed and made by this inventor in the mine in which he toiled for his daily bread, and using a tool that would cause every cabinet-maker to *smile*, being nothing more or less than an *old broken saw file*. Besides the 406 pieces of walnut which comprise the framework for the clock, it has over 60 moving figures, so nicely arranged as to produce striking scenes of great interest, all actuated by wonderful mechanism. This inventor intends, whenever his means will justify him in doing so, to increase the number of figures to 100 or more.

Upon the front of the clock are three balconies, rising above an elegantly carved pedestal. On these balconies the moving figures appear. Upon the lower balcony a procession of Continental soldiers, headed by a General on horseback, file pass, while close at hand the old Liberty bell peals forth its notes proclaiming "liberty to all the land." As the Continentals pass along they are saluted by a sentinel, while at the same moment a door flies open on an upper balcony, revealing the heroine of the Revolution,—Mollie Pitcher,—who suddenly fires a cannon with startling effect. To illustrate how well Mr. McGlynn has considered even the smallest details in the clock's construction, it should be mentioned that he has placed a *revolving fan* within the clock, to be actuated *after* the firing of the aforesaid cannon, for the purpose of rapidly *clearing away* the powder smoke caused thereby. Simultaneously with the firing of the gun, portraits of the Presidents of the United States, to the number of twenty, pass panoramically into view on the balcony that looms up above the tableau beneath, of which Mollie Pitcher is the central figure; while Thomas Jefferson proudly holds up to view the Declaration of Independence.

Next is a Biblical scene. The twelve Apostles march past, His Satanic Majesty appears, while the cock lustily crows in warning to Peter. Meanwhile a figure of Justice slowly raises her scales as the form of the Saviour appears, while during the entire scene a figure representing Death tolls off the minutes on a bell. The figures were all cast by this miner-mechanic in moulds designed by himself, and almost everything connected with this wonderful time-piece was the work of his own hands. Certainly, when one views this piece of mechanism, the rude and simple tools which were used in constructing it, and is informed how he bought the necessary wood piece by piece whenever he could afford to, who could but *wonder* and be deeply impressed with human possibilities?

Most every one has at some period of his life observed the scare-crows used by farmers for keeping the birds of the air away from their newly-planted fields. The "old-fashioned" scare-crow usually consisted of a pole holding up an old and tattered coat and breeches stuffed with straw or hay. While they were an eyesore to a *crow* they were also an eyesore to many an individual, as they were certainly *no ornament* to any farm. But now, a "Yankee inventor" has set his wits to work and invented what he terms a "Scare-crow Wind Mill." It consists of a small wind-mill, attached to a

standard, which may be easily inserted in the ground, while to the fan sleigh-bells are attached. The wind makes the fans go rapidly around thereby jingling the bells, which causes great fear and consternation amongst the crows.

And a Southern poultry-raiser has invented a device designed to prevent foxes, etc., from making away with young chickens that are yet under the protection of their mother's wing. As the hen-coop usually rests upon the ground at night, as well as by day, it is a very easy matter for Reynard to capture young chicks during the hours of darkness, thus gradually despoiling the mother-hen of her brood.

How to *prevent* said despoilation was the problem, and *this* is the way in which he solved it: To a post inserted in the ground, an arm was attached, securely pivoted thereto about the centre of its length, whereby it would have a perfectly free upward and downward movement. The whole affair, in fact, greatly resembling an old-fashioned well-sweep. At one extremity of the arm an ordinary chicken coop was then firmly secured.

By the use of this odd contrivance the coop could rest upon the ground during the day time, and at sun-down it could easily be *lifted up into the air*, out of the reach of Mr. Fox, by a person's simply bearing down upon the free end of the pivoted arm and securing it in said depressed position for the night by means of a heavy weight. At peep o'day the hen and brood are returned to *terra firma* by disconnecting the weight, and gradually lowering the coop. Although this is a rather "curious" invention, is it not at the same time of real value and utility?

One of the greatest of electricians, and *the* inventor of the age,—Thomas A. Edison,—has invented a curious device by which telegraphing to and from *running* railway trains can be easily done by simply utilizing the *ordinary* telegraph line at the side of the track. This is done by *throwing* the electric current, by induction to one of the wires alongside of the railroad. His experiments have already shown that the spark can be *thrown* 180 feet. The regular Morse instrument, with certain appliances, may be used. The battery is grounded in the wheel of the car, and on the top of the car there are condensers of tin-foil spread upon long strips of wood. Edison is reported as having said that he "makes electricity jump 180 feet through the air without spilling it."

In this connection, the following copy of a telegraphic dispatch, recently appearing in a daily newspaper, describing a trial-exhibition of Edison's plan, will prove of interest:—

"NEW YORK—An exhibition of telegraphing from a train going at the rate of forty miles an hour was witnessed by about two hundred and fifty gentlemen from New York and Philadelphia on Thursday, on the Lehigh Valley road, between this city and Easton, Pa. The excursion was got up by the Consolidated Railway Telegraph Company, and was for the purpose of illustrating recent improvements in rapid telegraphy invented by Thomas A. Edison and others. The train left Jersey City about 1 o'clock, and on reaching Perth Junction, which is the beginning of the Lehigh Valley system, messages were sent from the flying train to persons in many parts of the country, to which answers were received while the train was going at a rapid rate, the system being one of induction, the messages traveling through the air until they reached the wires that ran parallel with the railroad tracks.

"A message was sent to the *World* while the train was nearing Easton, and in a short time an answer was received and was greeted with cheers by the passengers. About 400 messages were sent, many of them to prominent people in this country and Europe.

"During the run to Easton the champagne gave out, and an order for more was telegraphed to Easton from the moving train. Upon the arrival of the train at Easton the wine was found ready to be delivered to the thirsty travelers."

And it is stated that he is also experimenting upon a plan for telegraphing from one ship to another at sea, by a somewhat similar method, viz: throwing the electric current over the water, and from the data already obtained, his conclusion is, that it can be thrown twenty-four miles or more through the air, *without spilling a drop of electricity*.

Now, although Edison's plan of telegraphing, viz: "making electricity jump through the air," is original with himself; the *idea* of telegraphing to and from *moving trains* is *not* original with him, for, on a certain New Jersey railroad the experiment of telegraphing from a train in motion has been tried with success and is still in use. While a Mr. Chesebro, has recently invented, and patented, a railway car telegraph which is operated by means of certain new and novel mechanism. The inventor says:—"The object of this invention is to enable the conductor of any train, while in motion, to hold communication with any other train on the same road, or with any station." "This of course is a most desirable thing—as by its means the conductor of one train can immediately know the exact position of the other trains on the

road, and so, can by ordinary care, avoid the dangers of collision." "He can also while his train is traveling at *full speed* be notified of any obstructions, or accidents to the track, and thus nineteen-twentieths of the causes of railway accidents removed."

Is it too much to *predict* that ere the close of this century devices for "train telegraphing" will be adopted by a majority of our American railroads? *I am inclined to think not.*

Aerial navigation has occupied the attention of inventors for many years, and each succeeding year witnesses a gradual improvement in air-ships and means for operating them. In the past some of these inventors have been almost *too enthusiastic* regarding the possibilities of their *own* particular "sailor of the skies." I have in mind one certain "aerial inventor" who, when he filed his application for a patent, (which was granted him), the drawing accompanying the same, which contained a representation of his wonderful (?) air-ship, showed it up in rather unique style, to say the least. A large three-decked vessel of handsome design, furnished with balloons and movable wings radiating from its sides, and which were supposed to be operated by steam power (as smoke stacks, with smoke issuing therefrom, is shown on the vessel) was shown up in all colors of the rain-bow. Upon the decks are elegant reclining chairs occupied by well-dressed ladies and gentlemen, who are *apparently* enjoying themselves to the *utmost*, while other tourists are promenading up and down the decks. Others are taking *solid comfort* in small *air boats* attached by ropes to the larger vessel, thus *following* in its wake. Even *anglers* are not forgotten, for, leaning over the deck-rails of the air-ship we may discern numbers of either sex with rod and line in hand angling for the feathery inhabitants of the air, and dangling from the lines of two or three, winged-fowls are seen that vainly struggle to get freed. And the whole scene is grandly illuminated by the orb of day, (above which the ship is sailing,) in all its resplendent grandeur. Surely, it is enough to make an ordinary mortal's mouth *water*, and *long* for a *trip* on the wonderful air-ship, after gazing upon such an attractive drawing as was filed in this particular case, wherein the artistic draughtsman undoubtedly drew *somewhat* upon his *vivid* imagination. Yet, coming down to *sober facts*, each succeeding year witnesses gradual improvements in air-ships and methods of operating them, and proved by actual experiment to be of some practical value.

Quite recently a well-known New Englander, well-known in Europe for his achievements in connection with the telegraph—Frederick A. Gower, made experiments in aerial navigation, using a steam balloon having a lifting power of at least two tons. This machine was a cylindrical balloon, 100 feet long by 33 in diameter, and contained about 2,500 cubic yards of hydrogen. The car was provided with a small *steam boiler*, *heated by gas* made in the car by forcing a current of air through a body of partly refined petroleum. The propelling wheel had flat blades, and was placed at the valve of the machine, where it rarified the air in turning, and thus drew the aerostat after it by *suction*. A speed of six miles an hour was made by this steam balloon, while the movement of air seemed perfectly still from the stern to the bow, as if the machine created its own fair wind as it went along. His experiments demonstrated the possibility of driving a large balloon fairly against the wind by steam power, even at a low rate of speed.

Upon August 9th, 1884, two Frenchmen, Messrs. Renard and Krebs, made a trial trip in a balloon with pointed ends, which was driven by an electric engine, and had a screw-wheel with blades almost flat placed at the valve of the machine, where it seemed to act by rarification, as well as in some degree by direct propulsion, like a screw at the bow of a steam-ship. With this machine a speed of thirteen miles to the hour was attained in calm air, the machine obeying its helm, and returned direct to its place of departure, but, in the next experiment, a moderate breeze carried the balloon two miles out of its path.

That eminent scientist, Prof. Richard A. Proctor, apparently believes that the time will *come* when aerial navigation will be made a *complete* success, for, he is quoted as having recently said: "That the man who has learned to traverse the land more swiftly by mechanical means than its most active denizens, and to make the wide seas his highways by similar devices, should be unable to travel in the air, which by natural selection alone has become the home of creatures descended from reptilian forms, is to me unthinkable. Whenever the power of flight, as distinguished from mere flotation, has been obtained, the simplest methods of travel ever employed by men will be devised. For one of the conditions of safe and speedy flight is a very high velocity. Swift motion must be secured at the beginning of each journey, and maintained throughout."

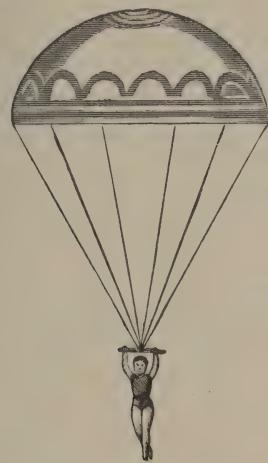
While I presume that air-ships or other aerial mechanisms might have to be repaired at comparatively frequent intervals, that disadvantage would be more than offset by this *advantage*, i. e., the aerial *roadway* would *never* require any *repairing*. And the dangers of collision among the air-ships would be reduced to a minimum, if they were guided and controlled by electricity, and at night carried electric lights.

There are, of course, immense difficulties yet to be *overcome* before aerial navigation can be made a *complete success* in every sense of the word, yet, these few partially successful flights will start many men in every country into aerial enterprises. Moreover, at first very short voyages will be undertaken, and it will be a very expensive mode of conveyance for many years.

— But, *I prophesy*, that eventually aerial navigation will change the entire aspect of the World's face. Every portion of the earth's surface will be readily accessible to man. The North and South Poles will yield up their secrets, while dark continents will disappear, and every savage tribe or nation will be under the domination of civilized powers. Upon hills and highest mountain tops cities and villages will be built, and vast numbers of the human race will, like the birds, become migratory in their habits—in winter inhabiting the warm regions of this earth, and in summer the cooler zones.

A certain Boston woman, evidently appreciating the need or *necessities* of a portion of the gentler sex, obtained on February 22, 1881, patents on two somewhat novel devices, of more or less interest to womankind. The first is a device for restoring facial symmetry, which consists of a spring plate, formed with a head and two prongs projecting from it; the head of which device being designed to be securely attached to one's teeth, and the prongs or forks being inside the mouth and pressing *outwardly* against the inner surface of each cheek, causes *in time* one's cheeks to look exceedingly plump and pretty, instead of being hollow and gaunt, as they doubtless were, prior to using the "patent cheek beautifier." Her other invention is a "finger compress," which consists of two longitudinal concave plates hinged together at one end by a spring-hinge, and thus adapted to fit the tips of one's fingers, while the constant *pressure* upon them gradually *reduces* their size, thereby making them smaller, more tapering, more elegant, and more symmetrical than they were previous to the use of the "patent finger compress."

Syracuse is known throughout our vast domain as "the City of Salt," from the fact that the discovery of salt and its manufacture, was the original starter, developer and advertiser, of the beautiful and enterprising city of to-day. It may be, that the "Saline City" will henceforth also be noted and distinguished from its being the home of a young inventive genius,—William J. Kuntzsch, whose latent inventive powers have been aroused and brought out, by his *meditations* upon the question of *how* to afford our "youngsters" healthful exercise and entertainment combined, at trifling expense. The result, is a "toy parachute," recently patented by him, and which *must* exercise the muscles of the children, and amuse and delight them also.



A TOY PARACHUTE.

The top, or umbrella portion, is made of Japanese paper in attractive colored designs, and is strong and flexible. The figure of an athlete or aeronaut clasping a suspension-bar, (or other configurated weight,) is suspended from the top by means of colored cords, etc. The device is operated thusly: Carelessly fold the top, the figure, etc., lying underneath; place it in the palm of your hand and toss or throw it up into the air, whereupon the top speedily opens and fills out under the sustaining or resisting force of the atmosphere, and the parachute gradually descends towards the earth, making a beautiful appearance, and resembling the professional aeronaut descending with a parachute. What could be *more* enjoyable than to witness a group of "little ones" amusing themselves with the pretty parachute?

There is substantially *no end* to the curious and odd devices that are yearly patented in the U. S. Patent Office, and, while the limits of this work will not allow us a detailed description of any more of them, I might add, in conclusion of this chapter, that among the thousand other funny humors of the office, there is a "machine for *forcing* a hen to lay eggs;" a "hand sewing machine" that is operated in the same manner as opening and closing a pair of scissors; a "tickless clock" with no pendulum or hair spring; a "cigar selling machine" that drops out a cigar, clips off the end, and exposes a match and a piece of sand-paper when a nickel is dropped into a slit in the machine; a "nose protector" by which a woolen pad is snugly carried on the end of one's nose in cold, blizzard weather; a "combined Saratoga trunk and rocking chair;" a "decoy duck" with a variety of detachable heads; a "machine that talks;" an "air-pump" to force oil from a tank on a ship over a strong sea, to *calm* the troubled waters; a "combined coat and hat-rack and button-hook;" a fan rotated by the wheels of a baby carriage to keep the flies off baby; a fan-shaped device for enabling the deaf to hear through their teeth,—if they have any; an "electrical boot-blacking machine," in which a brush is rapidly revolved in a non-rotating handle,—thus giving you and the boot-blacks a chance to recuperate; "calendar cuff-buttons," provided with *movable* bands on which are printed the months, days, etc.; a small rubber mat, with little spikes over its face, on which the storekeeper drops the gold or silver change and from which a customer may readily pick it up; "cow-milkers" which automatically *milk* the cow; a "rubber funnel" which may be fitted over your head, large end up, so as to enclose all your hair while the barber shampoos you, and having a tube hanging down behind to carry off the suds, while a hose for flushing out the hair, funnel, etc., is provided; a "treadmill horse-car" of two stories, the horse and treadmill being on the first floor, while the passengers sit in the second story; a "smokeless powder" for sportsmen; a mowing machine with the cutting-knives placed *ahead* of the horses; a "toboggan slide on rollers;" a "cow-milking machine" that enables one to milk a *number* of cows all *together*; a doll having in its head-portion a phonograph, by which dolly can be made to *repeat* all words that have reached her phonographic brain; a "monster bicycle," with places for a couple of men in a basket suspended beneath the axle, who operate the vehicle by levers geared to the axle; a "church pew" that resembles a pew,

but having comfortable armchairs within; a "combined fish-net and umbrella;" a clock having on its dial the representation of a woman at a wash-tub vigorously washing clothes,—her arm actuated by the clock mechanism; a device for preventing restless children, (and older people,) from *kicking off* the bed-clothes; a "combined kitchen ventilator and clock winder," being a device for *connecting* the ventilator wheels commonly placed in windows with a clock; a "head-rest for travelers," which may be carried in one's pocket or grip-sack, consisting of a plush cushion hung on strong wires, and so made that it fits over the top of the seat-back. Upon this cushion the weary traveler may *rest* his tired head, and not, as commonly, have to "scrooge" down into the car seat in order to rest the back of his head upon the upholstering. Moreover every traveler may thus carry his *bed* with him, and *not* be compelled to pay two or three dollars to some sleeping-car company for the *privilege* (?) of breathing the bad air of a sleeper, and dreaming of his own large feather pillows at home during the lingering hours of the night; a "thimble" that *can't* get lost, as a chain connects it to a bracelet on the wearer's wrist; a "pleasure passenger-car," externally resembling a whale, and provided with a water reservoir and pumping mechanism, causing it to *spout water* as it travels along the track; a "gents' neckscarf," so constructed with elastic connections, that the wearer can, at will, jerk the knot and ends downward, thus disclosing to a spectator, on the uncovered shield thereof, the word "rats," or other words or emblems; a cunning "guillotine for decapitating poultry,"—no more cutting with an axe or wringing of the fowl's neck; a "movable toy target" representing a bear with a detachable heart at its centre, and every time the heart is struck, out it flies; a "door-mat bell," by which one's arrival is announced by *stepping* upon the door-mat secured outside the door, no more pulling of bell-knobs; a "lightning-protector for oil-tanks," comprising a balloon anchored over the tank, and carrying lightning collectors and conductors leading to the earth; a machine for setting type; a "luminous horse or carriage-block" having series of glasses on its exterior provided with a background of *luminous* paint, thus obviating all danger of a mis-step on a dark night; a baby carriage, the body of which has the external appearance of a cornucopia or horn of plenty; the "speaking doll," that says "papa" and "mamma," as natural as life; the "bull-dog money box," and the "fighting cocks" that *fight* one another in the most *wonderful* manner.

## CHAPTER V.

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**T**HERE are other "curious" matters, historical and otherwise, that, to a greater or less degree, relate to patents and the Patent Office, well meriting the attention of my readers; and, as they properly had no place in the preceding chapters, I have devoted this particular chapter to those various items of interest which, though necessarily appearing in a somewhat disconnected or fragmentary form, will be found *very readable* in the fullest sense of the word. This much by way of prelude.

The immense value and importance of *one single hair* in preserving the health of our worthy (?) legislators who annually assemble in the Capitol at Washington, is well demonstrated by the following *true* and interesting facts:

Away down in the basement of the U. S. Capitol Building is situated the enginery by means of which the House of Representatives, the Senate Chamber, and the committee-rooms and corridors are warmed and ventilated, and the gas lighted by electricity. The apparatus used consists of three fans of immense proportions, four engines and eight boilers, with all the necessary appliances for regulating the temperature and moisture of the air supplied to the different parts of the Capitol building. The instrument which tells whether the air is too moist or too dry is operated by *one single human hair*,—nothing less, nothing more. Perfectly dry air is put at 0; saturated air,—that is, air carrying all the moisture it will hold,—is put at 100. There is a dial having a hand like that of a clock representing the different degrees from 0 to 100.

It is a well-known fact that the human hair *absorbs moisture* like a rope, and like a rope it becomes *shorter* when wet. The difference in length between a hair six inches long when wet and the same hair when dry is made to represent the 100 degrees of

moisture upon the dial, and the hand moves forward or backward as the moisture in the air varies. When the air becomes too dry more steam is thrown in; if too moist, less steam is allowed to enter; and thus the atmosphere of the entire building is kept at a healthful temperature. Surely, the inventor of this device deserves the commendation of our Honorable in Congress, as well as that of all Americans who are desirous their Representatives may breathe that greatest gift of our Creator,—pure, wholesome air.

There lived some years ago, a certain Major von Hruschka, in nationality a German, and by profession a bee-keeper. Now it happened that one day when the Major was in his apiary, that his little boy chanced to be there also. On this particular day the son and heir came into his father's presence with a tin pail, to which a string was attached. The boy desired a piece of honey, whereupon the Major placed a good sized piece into the pail his son was carrying. Hardly had he done so, before the youth, boy-like, commenced to *swing* the pail containing the honey round and round in a circle, holding on by means of the string. A short time after he had ceased his amusement the Major accidentally happened to look at the piece of honey in said pail, and to his great astonishment found that the honey was neatly and perfectly *drained out* from that side of the comb which had been on the outside of the circle as the boy swung the pail around and around by the string. Thoughtfully the Major turned the comb over and requested his son to swing the pail again. The result was *just* as he had expected, for this time the *other side* of the comb was completely drained of its honey, and whole souled Major von Hruschka retired to bed to do some thinking. He thought and thought, and tried experiment after experiment, until he conferred upon bee-keepers that simple yet wonderful invention,—the honey-extractor,—which *whirls* the honey out of the comb by *centrifugal* force, thus leaving the comb sound and perfect to be *filled again* by the bees, while lovers of honey have liquid honey, clean, pure and beautiful, upon which to feast. The Centrifugal Honey Extractor is thus, as you may readily observe, directly attributable to the careless swinging of a pail by the Major's son.

It is *surprising* to what *enormous* proportions the manufacture and consumption of chewing-gum has grown in this country. In every part of our land *somebody* chews gum, while in some localities it is chewed by *everybody*, and so far as our girls and boys are concerned there are but very few of them that *eschew* it,—they like it too well.

The manner in which the introduction of the ever popular white chewing-gum occurred, was merely accidental. A well-known New York man, who is at present the wealthy proprietor of a chewing-gum factory in said city, went to Mexico in the year 1850 and brought with him on his return home many specimens of the products of the soil of said country. In 1867 he commenced a series of experiments with the various specimens, among which was a product known as *gum chicle*, a substance somewhat resembling India-rubber. As a result of his experiments with gum chicle, he was firmly persuaded that he had discovered the way to *cheapen* the production of hard rubber goods by adulterating with chicle, and in a short time about 30,000 pounds of the gum chicle was collected and brought to New York city and business was begun. Success seemed absolutely certain, but after the expenditure of much time and money the business was abandoned, for the simple reason that the gum could not be vulcanized successfully.

Not long after the abandonment of this project he happened in to a confectioner's store, and while he was there a young girl entered, tossed a penny upon the counter, and asked for a stick of mastic chewing gum. Instantaneously there flashed through his mind the *idea* that perhaps chicle might be utilized for chewing gum, and accordingly he began to experiment with it having that object in view, and after several months of study and many disappointments, success crowned his efforts. When he had arrived at that stage in his experiments whereby he was enabled to produce a beautiful white substance, he sensibly applied for a patent on his discovery. Throughout the world this particular gum is known and used, and can be found on the shelves of nearly every confectioner, grocer and druggist.

The tree from which the chicle exudes bears a fruit the size of an orange, of delicious flavor, known as sapodilla, and which is extensively used by Mexicans as an article of food. By tapping the trees the gum runs out freely, is then molded into cakes which the sun hardens, and after being made into packages of about 300 pounds, is placed on pack mules and thus brought to market. The natives never think of starting on a long journey across country without first providing themselves with a liberal allowance of gum chicle with which to allay the pangs of thirst, for by chewing the gum moisture is created in the mouth and throat, thereby diminishing one's desire for water.

The following *verbatim* copy of the petition of John Mash, an old Inventor, in 1692 (nearly 200 years ago,) to Governor Fletcher of New York, for "aid to perfect an invention to increase the speed of vessels," is, for its *style* and *spelling* extremely valuable as a "curiosity."

## PETITION.

"These are to acquaint the Gouernor yt I am about makeing A small vessell that shall saile faster than all others by Abundance. According as I have allreadye acquainted you withall—Now Inn as mouch as This Exsolent art that I have found out will be mightily for the Honour and profite of the King and Kingdome of England, and Likewise it will be A meaines to Aduance New York.

"Therefore my Requist is, To the Gouernor, That he would bee plased In the King's behalfe to let me have as much saill cloth as will make me saills and a Little small riggaine, all of which will not cost Aboue seven pounds.

"Now, the Chifest reason why I make this Littell Vessell is to make ye Gouernor sencable That I can doe by my art as I have formarly said, And then if the Gouernor will be pleased to acquaint the King therwith, It may doe well.

"I pray you Gouernor do not slight This my art, Least it prove to the King's disadvantaige; and Hender yorselфе of benift that may bee got thereby; for ther hath been many arts Heretofore found out, that was slighted and thought as Imposable As this cane bee, before thay was discouered; as for instancs, at first, who could A believed that ye wide otione should be crost by art of shiping as it is at this time, and likewise who could believe That such Grat things should bee done by art of Gunpowder as is, and was not ye man of famus memory, C. C. which discouered This Amiricay slighted by England, but Imbraced by spaine and portugal to ther great Honor and profite, and many others Grat discoueryes of Arts That might bee instanced that made Europe to flowrish Aboue other parts of ye world that have not had ye advantage of such Ingenuis men Amoungst them; I pray denie me not of saills, and if I doe not perform what I proposed, Then I will be bound to pay you double for yor damage and yor saills Againe.

(signed) JOHN MASH."

We have no record of the Governor's answer to the above, provided he deigned to make any.

One more *rare* curiosity, and that is,—George Washington's recommendation of a certain invention.

In December, 1787, James Rumsey, an ingenious gentleman, a native of Maryland, but formerly of Virginia, exhibited before a number of respectable characters in Maryland and Virginia, his method of propelling a boat of considerable burthen against the current of the river Potomac, and for which he desired to secure patent rights from various states.

Three years prior to that time, General Washington having seen the model of one of Mr. Rumsey's boats and observed experiments made with it, penned the following recommendatory epistle:

“I have seen the model of Mr. Rumsey's boats, constructed to work against stream, examined the powers upon which it acts; been eye-witness to an actual experiment in running water of some rapidity; and give it as my opinion (although I had little faith before) that he has discovered the art of working boats by mechanism and small manual assistance, against rapid currents; that the discovery is of vast importance, may be of the greatest usefulness in our inland navigation; and if it succeeds, of which I have *no doubt*, that the value of it is greatly enhanced by the simplicity of the works, which when seen and explained to, may be executed by the most common mechanic.

“Given under my hand at the town of Bath, County of Berkeley, in the State of Virginia, this 7th of September, 1784.

(Signed) GEORGE WASHINGTON.”

How important a part some unintentional or accidental act may have in the development of a new invention, is clearly shown by the following circumstance.

George Edgar, a skillful metal-worker, was one day sitting with a friend in a Washington restaurant, after an unsuccessful visit to the War Department building undertaken to dispose of a cannon invented by him, and were discussing the matter pro and con, when Mr. Edgar, who was then remarking that “the need of the military world is a gun that will not explode,” accidentally *kicked off the cover* of an india-rubber cuspador.

This cover was made of hard rubber with beveled edges, the sides as they sloped towards the hole in the centre, having a fall or decline of about 30 degrees from a plane. Instantaneously there occurred to him the *principle* of a non-bursting gun, to be constructed of a series of plates similar in form to the top of a rubber cuspador.

He proceeded to make a cannon on that plan, and when finished, he transported it to the U. S. Military Academy at West Point, on the Hudson, to have it tested. The officer in charge first loaded it with a double charge, and it turned a few backward somersaults; then a quadruple charge, when it turned double the number of somersaults; next, a load to the very muzzle, when it whirled around and around in the air, burying itself in the soil; and lastly, a load nearly to the muzzle with powder and wad, the gun being also spiked, when it *whirled around like a pin-wheel* burying itself nearly out of sight in the earth.

All this while the cannon was not even *raptured*, and the military officer acknowledged that for *once* in his life he was *badly beaten*, as it conclusively proved itself to be a "non-bursting" canon.

It was in America that the first *successful* attempt to apply the power of steam to the propelling of vessels occurred, and the name of Fulton is associated with one of the noblest efforts of genius and science. It has often been regretted that no model was preserved of his steamboat, which was the *first* to demonstrate the practicability of making steam subservient to the purposes of *useful* navigation. There was, however, deposited in the Patent Office a volume of drawings elegantly executed by his *own hand*, delineating the various parts of the machinery he employed, and embracing three beautiful representations of his steamer making its first triumphant struggle against the opposing current of the Hudson river. The steamer was represented passing through the Highlands, and at two or three other interesting points on the river, with a beautiful sketching of the surrounding scenery, smiling as it were, at the victory which science and art had at last achieved over the power of the winds and the waters, and at the opening era of steam navigation, the benefits of which have since been so widely diffused. This volume, which *should* have been *preserved* among the Nation's choicest archives was destroyed in the fire of December 15, 1836, when the building then conjointly used by the General Post Office and Patent Office was totally consumed. Could it be replaced, what sum would be too great to be expended in so doing?

The author has, in the course of events, come across two exceedingly interesting and amusing compositions in the line of "imaginary patents," which well deserve to appear in *print*, as

they are morally certain to provoke a *smile* upon the most *serious* and *solemn* countenance.

The first, (authorship unknown), are supposed to be the “claims” in an application for a patent on a “Cheap-horse Corn-planter” and, are as follows, reference being had to the accompanying artistic (?) drawing. The inventor expresses himself as follows :



CHEAP-HORSE CORN-PLANTER.

“I am aware that a quadruped has heretofore been used in combination with an agricultural implement, and therefore I do not claim such a combination broadly; but what I claim, and desire to secure by Letters Patent is :

1. The planters B B, in combination with the beast A, constructed and operated as described.
2. The Bands i i, and pulleys c c, in combination with the hind legs of a cheap-horse A, to operate the planters and prevent kicking, substantially as set forth.
3. I Claim the cheap-horse A, clipped, as shown, in combination with a corpulent driver D, to prevent his traveling too fast, as described.
4. I claim the guide o, in combination with the “tail of a cheap-horse,” when said tail is put on in a vertical position, as shown and described.
5. In the cheap-horse corn-planter, I claim the tail b, when arranged vertically, to frighten the crows a a, as set forth.
6. I claim the worms (not shown) in combination with the “early birds” a a, for the purpose set forth,

The Yellow dog, with few friends, being an old device and somewhat at a discount in these days we do not *set any thing on him*, but merely throw him in to accompany the driver D, to give general effect to the patent after it is granted."

The second "imaginary patent,"—an improved Method of Feeding and Fattening Hogs, was composed by a prominent Washington Patent Attorney, (an old friend of the writer's), upwards of twenty years ago.

His composition, which bears the *impress* of many hours of *serious thought and study*, has not deteriorated during succeeding years, but has if anything, *improved* through age—just like "old cheese," and is as "fresh" and readable, amusing and interesting, as the day 'twas written.

It is as follows,—reference being had to the accompanying spirited sketch—*presumably* taken from life:

#### SPECIFICATION.

*To all whom it may concern:—*

Be it known, that I, Jonathan Smith, Jr., of Smithburg, in the County of Smith, and State of Ohio, have invented a new and improved Method of Feeding Hogs, and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention relates to the *fattening* of swine and other pachydermata, and consists mainly in the employment of auxiliary and external causes for *influencing a hog's mind* or its *equivalent*, for the purpose of inducing it to partake of nourishment after its ordinary and natural appetite has been satisfied, by which means the vesicles of its cellular membrane are caused to aggregate fatty particles with great rapidity.

The manner of carrying my invention into effect will be fully described hereinafter.

In the drawing is shown a perspective view of the pig pen, or its equivalent, and its surroundings, with various forms of vertebrata in and adjacent thereto, the quadrupedal hogs, however, being represented upon the interior thereof.

To enable others skilled in the art, to which my invention appertains, to use the same, I will proceed to describe fully my improved method, with the appliances for carrying it into effect.

It is well-known that fowls and other bipedal vertebrata are induced to assume an adipose state most rapidly by a system of stuffing. This system is based upon the principles that a vertebrate will not of his own accord, consume the amount of food necessary to cause it to assume the greatest adiposity in the shortest time; and, consequently, independent and external means must be brought to bear upon it to obtain the desired result.

The method of carrying this system into effect is usually as follows:—

The fowl, or other vertebrate to be fattened, instead of being permitted to partake of its chosen amount of sustenance in the ordinary manner, is compelled at regular and frequent intervals to absorb suitable rolls of prepared food, which latter are thrust into the esophagus, the mandibles are forcibly separated, the biped being of course, securely held in the arms of the operator.

The results of this system are so very marked and beneficial, that numerous attempts have been made to use it in fattening other members of the vertebrata, but hitherto without success.

Especially is it desirable to secure these *marvelous* results in quadrupedal mammals of the pachydermata. For obvious reasons, however, the system employed with feathered bipeds cannot be used with hogs or their equivalents, without some modifications. Aside from the uncleanly habits of the animal, it is hardly *practical* to take the larger sizes *in arms* for the purpose of stuffing them.

By means of my invention, however, all difficulty is obviated. Without using brute force to compel the unwilling animal to partake of nourishment, I so *influence its mind* or its equivalent, by auxiliary and external causes, as to induce it to feed *long after* its natural and ordinary wants are fully supplied.

I accomplish this result preferably by means of an *auxiliary* hog, or other quadrupedal mammal or its equivalent, which should be preferably constructed with a prominent frame, attenuated body, extended limbs, acute proboscis, and active insinuating disposition.

The method of procedure is about as follows: The main or primary pachyderm, or hog, to be fattened, or its equivalent, is first supplied in any suitable manner with proper food, an abundance of which should be placed in a suitable receptacle. Upon this he is allowed to feed without molestation until his normal craving for food is fully and completely satisfied, at which time an auxiliary

or secondary pachyderm or hog, or its equivalent, should be introduced into the apartment. The auxiliary hog, being properly *starved* beforehand at once rushes with eager haste to the food receptacle and proceeds briskly to devour the contents of the same.



NOVEL METHOD OF FATTENING HOGS.

The sight of this procedure, however, awakens in the *mind* of the primary pachyderm, or its equivalent, those feelings of *hoggishness* so common among bipedal mammals of the *genus homo*, and he at once devotes himself with *renewed* energy to the consumption of the food, in order that he may *prevent* his guest from devouring the same.

When the primary pachyderm has taken all that is possible under these pressing circumstances, the secondary may be removed, and again confined until the next meal.

If desirable, however, a third and even a fourth auxiliary (of graduated sizes) may be employed to *renew* the flagging spirits of the satiated primary, after he has become accustomed to the presence of the secondary.

In the drawing, A represents the primary or main hog or its equivalent, which may be of any suitable breed and proper construction, it being provided, *of course*, with the *usual* organs of mastication and digestion.

It is desirable also, that the hog should be provided with a *chivalrous* mind, or its equivalent, in order that it may quickly *resent* the insult offered by the intrusion of the auxiliary, and act accordingly.

If desired, however, the *caudal appendage* may be entirely *omitted*, as this forms no part of my invention.

B represents the auxiliary, or secondary hog, who should be earnest, energetic, tenacious and *impudent*, with his mind devoted *solely* to his business. C represents the feeding trough. D represents the pen, provided with a gate d, having a suitable *mammal* attachment E, for operating the same. F, G and H represent individuals of various nationalities and gender, and I, J, K, p, q, r, s, t, sundry and divers things too numerous and tedious to mention specifically, which have been combined and arranged in my invention without regard to expense or taste.

But one single pen is shown in the drawing, though, if desirable, a series of pens may be employed, the same auxiliary being successively introduced to each.

This invention, it will be perceived, is based upon correct principles, long in use with other vertebrata, and its adaptation to this peculiar use supplies a want long felt among lovers and raisers of hogs.

Having thus fully described my invention, what I claim as new and desire to secure by letters-patent is,

1st. The method described of *influencing a hog's mind*, or its equivalent, by means of external causes, substantially as described.

2d. A pachyderm or hog, influenced by *external causes*, substantially as described.

3d. A primary and secondary hog, or their equivalents, combined substantially as described.

4th. The combination of the main pachyderm and its auxiliary, with the feeding-trough, substantially as described.

5th. An ascending or descending series of graduated pachydermata, combined with each other, and with a feeding-trough, or its equivalent, substantially as described.

6th. A pachyderm having the vesicles of its cellular membrane made adipose, by a system of feeding in two or more distinct periods of time, substantially as described.

7th. The specific device described, or its equivalent, consisting of the hogs A, B, pen D, with feeding-trough C in southwest corner thereof, or thereabouts, gate d, manipulated by bipedal mammal E, of the colored persuasion, or its equivalent, and individuals F, G, H, of various nationalities and gender, on the North and East sides, in combination with the house I, barn J, wheel-barrow K, and general view p, q, r, s, t, in the distance, either *with* or *without* the sun X, the parts being arranged relatively as described, for the purpose set forth.

This specification, signed and witnessed this 39th day of October, 1870.

Witnesses: HENRY HANOVER,

Inventor:

JOHN BISMARCK.

JONATHAN SMITH, JR.

A fit finale to this chapter of "scrapographs" is a poem by T. E. Corbett, entitled, "The Inventor's Wife," which is so apt, descriptive and humorous, that I deem it a *pleasure* as well as a *privilege* to insert it in its entirety.

#### THE INVENTOR'S WIFE.

It's easy to talk of the patience of Job. Humph! Job had nothin' to try him; Ef he'd been married to 'Bijah Brown, folks wouldn't have dared come nigh him! Trials, indeed; now I'll tell you what—ef you want to be sick of your life, Just come and change places with me a spell—for I'm an inventor's wife. And sech inventions! I'm never sure, when I take up my coffee-pot, That 'Bijah hain't been "improvin'" it, and it mayn't go off like a shot. Why, didn't he make me a cradle once that would keep itself a-rockin'? And didn't it pitch the baby out, and wasn't his head bruised shockin'? And there was his "patent peeler," too, a wonderful thing, I'll say; But it hed one fault—it never stopped till the apple was peeled away. As for locks, and clocks, and mowin' machines, and reapers, and all sech trash, Why, 'Bijah 's invented heaps of 'em, but they don't bring in no cash. Law, that don't worry him—not at all; he's the aggravatinest man— He'll set in his little work-shop there, and whistle, and think, and plan, Inventin' a jews harp to go by steam, or a new-fangled powder-horn, While the children 's goin' barefoot to school, and the weeds is chokin' our corn.

When 'Bijah kep' me company he warn't like this, you know;  
Our folks thought he was dreadful smart,—but that was years ago.  
He was handsome as any pictur' then, and he had such a glib, bright way—  
I never thought that a time would come when I'd rue my weddin' day;  
But I've been forced to chop the wood, and tend to the farm beside,  
And looked at 'Bijah a-settin' there, I've just dropped down and cried.  
We lost the hull of a turnip crop while he was inventin' a gun;  
But I counted it one of my marcies when it bu'st before 'twas done.  
So he turned it into a "burglar alarm." It ought to give thieves a fright;—  
'T would scare an honest man out of his wits, ef he sot it off at night.  
Sometimes I wonder ef 'Bijah 's crazy, he does sech cur'ous things;—  
Hev I told you about his bedstead yet? 'Twas full of wheels and springs;  
It hed a key to wind it up and a clock face at the head:  
All you did was to turn them hands, and at any hour you said,  
That bed got up and shook itself, and bounced you on the floor,  
And then shet up, jest like a box, so you couldn't sleep any more.  
Wa'al, 'Bijah, he fixed it all complete, and sot it at half-past five,  
But he hadn't more'n got into it, when—dear me, sakes alive  
Them wheels began to whizz and whirr; I heard a fearful snap,  
And there was that bedstead, with 'Bijah inside, shet up, jest like a trap.  
I screamed, of course, but 'twant no use. Then I worked thet hull long night  
A tryin' to open the pesky thing. At last I got in a fright;  
I couldn't hear his voice inside, and I thought he might be dyin',  
So I took a crowbar and smashed it in. There was 'Bijah peacefully lyin',  
*Inventin' a way to git out agin.* That was all very well to say,  
But I don't believe he'd have found it out ef I'd left him in all day.  
Now, sense I've told you my story, do you wonder I'm tired of my life;  
Or think it strange, ef I often wish I warn't an inventor's wife?

## CHAPTER VI.

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“PERPETUAL motion” undoubtedly coming within the province of “things curious,” it seems proper that this *interesting* subject should next be referred to, for the edification of my readers.

There are numerous advocates of, and believers in “perpetual motion,” still in existence; not only in this country, but in others; and among them are found quite a few enthusiastic and ambitious inventors who sincerely believe themselves to be the inventors or discoverers of “self-motors,” “self-running motive power,” and various devices christened under different names, yet *all* really coming under the one head of “perpetual motion.”

In that standard reference work on mechanics,—“Knight’s Mechanical Dictionary,” edited and compiled by the late Edward H. Knight, civil and mechanical engineer, etc., etc; we find “perpetual motion” lucidly defined as follows:—“*an ignis fatuus* which has led astray some persons of limited scientific knowledge in all ages and regions. As the knowledge of scientific truth advances, we arrive at some axioms, and we now know that motion involves an expenditure of force, and that even a balance beam poised by steel edges on agate plates and started pulsating, meets with the resistance of the air and generates some friction between the contacting surfaces, and *must* come to a *stop*.” He gives further expression to his views thusly: “It is impossible to make a machine which shall move without a motor, or which shall maintain the motion originally imparted to it unimpaired for an indefinite length of time, without receiving an *accession* of power.”

Many learned and scientific men who have given “perpetual motion,” and the principles involved therein, careful investigation and study, fully concur in the views above expressed. And yet,

upon the other hand, individuals *apparently* well up in mechanics and mechanical laws, hold views directly the opposite. As far back as the year 1600 A. D. (and even earlier,) down to the present time, we have record of various ingenious contrivances that have been evolved for obtaining perpetual motion,—some of them exceedingly curious,—if not absolutely absurd; and, in view of what *has* been invented, I would suggest to some of the perpetual motion discoverers (?) of the present day, that not only is there a *likelihood* of their contrivances proving *fallacies*,—something they will in all probability *not* believe,—but furthermore the *chances* are that they may not be even *novel* in view of contrivances invented years and years ago.

At comparatively frequent intervals, applications for patents for perpetual motion machines are received at the U. S. Patent Office. And for years back “perpetual motion” inventors have been sending in their applications, and as yet there appears to be little, if any discouragement on the part of those inventive individuals who are struggling to successfully solve the great problem.

There is no disputing the fact that, once let a man become inoculated with perpetual motion ideas, he usually holds fast to them in one form or another until he “shuffles off his mortal coil,” and if he has failed to inoculate somebody else, then, the idea appears to spread spontaneously, and the ranks of “perpetual motion experimenters” instead of becoming depleted, are as a rule, kept filled to the maximum degree.

After our “perpetual motion” friends have reached a certain stage in their theoretical experiments, they proceed to see about filing a caveat, or securing a patent on their device.

To the applicants for patents for “perpetual motion” devices, the U. S. Patent Office forwards a letter worded substantially as follows:—

“The office has no knowledge of any reward offered by the Government for the discovery of “Perpetual Motion.” Many applications for patents for such alleged invention or discovery have been received at this office, but they have been found inoperative and opposed to well-known physical laws. A working model is always required to be filed with an application for perpetual motion, in order that the device may be fully demonstrated.”

A circular-letter, reading about as follows, is also utilized by the Patent Office in correspondence of that nature:—

"SIR: Your application for a patent on an alleged Perpetual Motion has been received, with the fee therefor. Before entering said application on the books of the Office, it is thought proper to advise you, in order to save you further expense and labor, that the views of the Office coincide with those of scientists in general in regard to mechanical perpetual motions,—that they are impossibilities. Should your application be duly entered, (or filed,) the first official action would be the requirement of a **WORKING MODEL**—the Office being aware that it will be impossible for you to comply with this requirement. For the reasons given your application and the accompanying fee are herewith returned. If, notwithstanding this notice, you still desire your application and fee to be accepted by the Office, you may return them and they will be retained."

It will be observed from the foregoing, that an applicant for a patent on a perpetual motion machine is pointedly advised of the futility of prosecuting further experiments in that direction; also that the office does not desire to consider applications of that class, or accept the money of the enthusiasts; and, moreover, that if an application is *insisted* upon, a *working* model will be *next* in order, a requirement the Office considers *impossible* for an applicant to meet.

There are a considerable number of persons who labor under the delusion that not only our Government, but also certain foreign powers, have a standing reward offered to the inventor of a perpetual motion machine,—one that really *is* perpetual in its operation; while the truth of the matter is that there is *none* offered, whatsoever. And I understand that the Patent Office is quite frequently in receipt of communications somewhat like the following:—"Please tell me what the premium offered for the invention of perpetual motion is; also, whether it is to be used as a propeller to drive other machinery. An early reply will greatly oblige."

Out of the various "perpetual motion" devices of these latter days, I will briefly refer to a few, ere leaving the subject.

In the "Keystone State," in a small town near Pittsburg, resided a man who claimed he had invented a wonderful pump. This device, when once set a-going, would (according to his telling,) continue to pump *ad infinitum*. The pump proper was of simple construction, but the mechanism he employed to attain the desired result was the very opposite. He provided the spout of the pump with an overshot wheel, having a crank secured thereto, which in

turn connected with numerous other arms, employing thirty-six joints to move upon, until it reached the sucker-rod, which it lifted and lowered as the wheel operated by the water flowing from the spout turned; so he said. The story goes, that the Patent Office Examiner before whom the application for a patent came, attempted to prove the worthlessness of the device, and that the inventor, after a few interviews, came to the conclusion that the Patent Office was "no good," and went away, threatening to destroy his model, and thereby *deprive* the world of the greatest(?) of all inventions. It is said that he died last year in an asylum for the insane, surrounded by the wreckage of his wasted efforts.

The "wind for a wind-mill" device, invented lately, was really more *interesting* than the device of the individual just mentioned, as it actually *could* be made to run for a *brief* period, and formed quite an ingenious toy.

It was a small wind mill, having suitable arms connected to the wind-wheel and attached to a bellows, so placed as to operate the wheel. By starting the wheel the bellows would be operated to furnish additional air to the wheel; but, necessarily, it would soon stop working on account of the *friction* developed.

Regarding pumps, we have another "cold water man," a Mr. Stone, an Ohioan, who has invented a machine for attaching to a pump. As in the other case, the machine works the pump and the pump works the machine, (presumably,) and there you have it.

An individual, Gillespie by name, a resident of the "Buckeye State," is having constructed a motor which is *expected* to exemplify perpetual motion, for the intention is that it will not only run itself, forever and eternally, but will run machinery also. A certain country newspaper, published in the locality where the motor is being built, gives in apparent seriousness, the following description of this most wonderful (?) product of man's gigantic intellect:—

"Unlike usual methods of attaining perpetual motion by the aid of levers and weights, the Gillespie motor has no weights to lift at any point, and no resistance to its progress except friction and atmospheric resistance. The weight of the motor wheel has to be first lifted in position by external means before the machinery can revolve. In this it somewhat resembles a clock, but unlike a clock, the weight cannot run down.

"The principle employed is a suspended weight which indirectly sets itself revolving by its own gravity. All parts of the instru-



SOUTH HALL OF MODEL ROOM, UNITED STATES PATENT OFFICE.

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ment have been calculated with the utmost precision and care. The weight or propelling power, will exert on one side of an evenly balanced wheel a pressure of about 600 pounds, with nothing to counteract this pressure except friction and what resistance the atmosphere offers to any revolving body. The friction, it is computed, cannot be more than 25 pounds, hence the model will develop 575 pounds pressure of reserved power that can be applied to turning machinery, pulling carriages, boats, &c. By a simple arrangement the weight can be easily increased ten-fold or more, so that its power is practically unlimited except by the strength of material of which the motor is constructed.

"The instrument when built will be about four feet in diameter, and will weigh from 150 to 200 pounds.

"Let the reader imagine a six-spoked steel wheel somewhat resembling a buggy wheel revolving on a spindle or axle. In the centre of the wheel is a brass gear wheel, six inches in diameter, keyed firmly to the end of the aforementioned spindle. Meshing with this wheel are six smaller gear wheels turning on each of the spokes of the large wheel, and further out on these spokes are arranged a series of larger gear wheels, all working together, and free to turn around the rigid centre gear. The six outer gears mentioned have each a steel lever riveted horizontally across them, with ends projecting all to one side. To these ends is fastened a heavy disc of iron which is the source of its power.

"Contrary to natural philosophy, as it is generally understood, this weight is thus held suspended horizontally nine inches from the centre, and is yet free to exert its entire weight to the machinery by which it is supported. As it is thus held at the end of a lever its force is multiplied so that it really exerts a propelling power of many times its own weight."

It is rumored that a stock company is interested in this "self-motor." If so, there is a possibility that the time *may* come when the confiding stockholders will discover that, instead of the motor's *working*, they themselves are being effectually "worked" on a "will-o'-the-wisp" affair, and, as an unavoidable sequence, not only be tempted to kick themselves, but the sanguine inventor in the bargain.

We next come in contact with a Georgia enthusiast, a Mr. Taliaferro, who claims, (it is said), to have solved the mystery of perpetual motion through the medium of a dream. As is usual with his class, he is not at all backward in discussing his inven-

tion (?). His model, as yet, exists only in the shape of *pasteboard*, —no working model. Imagine a pasteboard circle about seven inches in diameter, and around the periphery of which are pinned small arms, also of pasteboard, one end of each being movable. Secured to the movable ends, which are those next the centre, are small ordinary dress buttons. Through the wheel project pins which confine or limit the motion of the arms, and are so arranged that on the side of the wheel which is going up the arms with the attached buttons lie along the radii of the circle, but on the side which is going down the arms are allowed to fall a little below the radii on which their pinions lie, and the result is that there is an advantage of leverage on one side. That side goes down as soon as one of the arms passes through the lowest point. And in its revolution it falls back along its radius, and is supported there by a projecting pin.

A “perpetual motion machine” in the *full* sense implied by the title, should not only *run* eternally, (or until worn out,) but should *start itself*. This machine is designed to *start itself*. It is provided with nine arms, (or any other odd number,) whereby five will be on one side and four on the opposite side. That disposition of the arms will, (so the enthusiast says,) start the motor. Unfortunately, the pasteboard circle had got torn into two parts in some manner, consequently the *actual* working thereof could not be witnessed by the inquisitive individual who “dropped in” on the enthusiast for that purpose, but Mr. T. said “it *would go* when in complete shape.”

After meditating a moment, the inventor exclaimed, “Just to think, of this small pasteboard circle revolutionizing the world ! but it *will do it*.” “Surely,” ventured the interviewer, “you must have been laboring and studying over the device for a long, long time ?”

“That’s just it. I don’t deserve one bit of the credit,” said Mr. Taliaferro meekly. “I dreamed it. Yes, sir, I saw a star shooting around, and it got so it haunted me. Well, one night that star grew so bright that I couldn’t sleep. I arose, and without knowing what to do next, I cut out that circle, then, impelled by a force that I could not resist, I cut those arms, sewed those buttons on and stuck those pins. Then I called my wife, and the strangest part of all is that she had just dreamed about a wheel perpetually revolving, and as soon as she saw that wheel she instantly recognized it as the one she had seen in her dream. You see I had to

stick wads of paper on to make all parts of the wheel have the same weight. I expect to secure the royalty offered not only by this country, but in France, Spain, England, and elsewhere. I am positive that my invention is the first of its kind."

While Mr. T. has my best wishes for success in his attempt to obtain perpetual motion, yet, I fear, that he has never progressed beyond the pasteboard construction detailed above.

The *latest*, and *apparently* successful "perpetual motion" device, if the statements of the inventor and accounts of numerous eye witnesses are to be explicitly *relied on*, is the "self-motor" invented by that well known inventive genius and "patent-right" individual,—David Jennings,—a resident for many years of Lyons, the county-seat of Wayne County, N. Y., but latterly a resident of Oneida, Madison County, N. Y.; and in which latter place, (at the Evans House,) he has recently had on exhibition, and in actual operation, a machine designed to exemplify the fact that, "perpetual motion" is a *reality*,—not a myth. And it is stated, that the "working" of the machine has been witnessed by at least a thousand persons, many having come from distant localities to view the "wonder of wonders" (?)

"This model, or as it might more aptly be termed machine, is the ninety-seventh one he has constructed inside the twenty-one years to which he has devoted more or less of his time to the solution of the problem of "perpetual motion."

The mechanism is suspended in a wooden frame, the dimensions of which are about six feet long, two feet wide and seven feet high; and comprises an endless chain, which runs in the figure of a triangle over three pulleys, an upper, central and lower one, leaving three spaces or spans for the chain to pass over, one downward, another upward and the third nearly horizontal.

The path or line traversed by the chain greatly resembles the framework of an upright harp; the down line of the chain almost equaling in length the other two lines combined. The links comprising the chain are about two inches in length and of substantially triangular shape. The main pulley, over which the chain passes, is located at the top of the frame, and is keyed to a shaft which is in turn geared to a fly-wheel whose circumference is about three feet, and which it is claimed, can be made to make about one thousand revolutions per minute. The chain is *the* important factor of the device, its links being so constructed with automatic working hooks that, as they move over the top

pulley and begin their descent, the hooks automatically catch up every other link, thus making a *double* chain, the links being held in place until each one begins to pass around the lower pulley to go upward, when the hook drops out and the chain thence moves by *single* links. This construction and *modus operandi* of the chain makes the weight of the portion moving upward only about *half* of that which is passing downward. This increased weight downward seems to *pull* the single link portion of the chain *up* and around the two sides of the triangle; so the inventor claims.

The top pulley is composed of two discs, upon the outer edge of which rest the axles which support the links of the chain as it runs over said pulley. Before it can *start* on its perpetual (?) trip it must be correctly hooked by hand. It is said that Mr. Jennings then starts his motor by removing a small pin located at a top corner of the sustaining frame, whereupon apparently the chain starts off on its triangular trip without dependence on any outside power whatever; and also that its momentum gradually increases, often to such a degree that its motion has to be regulated by a brake. This present machine is claimed to have a force of about one tenth horse power. The inventor is now building a motor calculated to have ten horse-power; and he apparently firmly believes that his peculiar self-motor will eventually be utilized for running various kinds of machinery, traction-engines, street-cars, and, possibly, even railway locomotives. He further states that he has had quite a number of offers of good round sums for an interest in the invention; but whatever negotiations are made, it is likely he will desire to retain a controlling interest in the invention, if it really *is* "the biggest thing on earth;" for he is quoted as saying, "I do not propose to let this thing slip through my fingers as many inventors have done." Mr. Jennings informs me that it is probable that his *new* machine will be taken through the country on exhibition, in which event the general public will have an opportunity to *judge for themselves* whether it really *is* a self-motor, and one capable of *transmitting* power to machinery, etc.

Within the twenty-one years that have elapsed since my inventive friend constructed his first model, he has spent about \$40,000 in experiments, constructed at least 97 models, and worked on more than sixty different principles; but nothing satisfactory was developed until his discovery of the present device.

Whether he has really *solved* the problem of constructing a perpetual self-motor, or not, that he *has* shown great perseverance

or pertinacity in the prosecution of his attempts to solve the great problem must be admitted.

Presumably competent authorities hold that "perpetual motion," as broadly implied by the term, is in direct conflict with the natural laws governing our universe, and is, therefore, absolutely *impossible*. If our friend, Mr. Jennings, *has* developed *reality* out of what is quite generally held to be a mere chimerical object with golden wings, that flits hither and thither about the craniums of its devotees, then the glory and emoluments that he naturally will reap as his reward are indescribable. An agreeable personal acquaintance with the inventor, covering a period of several years, justifies me in wishing him all possible *success* in his earnest endeavors to revolutionize the principles now governing the motive power on this globe.

It may be well to add that the writer has not enjoyed the pleasure of personally inspecting the motor or seeing it work, as the mechanism was taken apart at the date he contemplated viewing the complete machine; and that, for the information embodied in the above description of its construction and operation, he is indebted to the inventor, and other parties who have inspected the "self-motor" and witnessed its workings.

## CHAPTER VII.

MANY persons are strongly impressed with the belief that Genius always works *merely* upon the spur of its own *inspiration*. It may be true that inventive Genius does find considerable sweetness in its own fervor and effusion, in the same respect as an author or a poet often does. But it must not be forgotten that the *chance* of receiving a handsome *reward*, adds fuel to the inventive flame to a wonderful degree.

Do you imagine that great novelist, Charles Dickens, wrote his novels merely from the pent-up force of his genius? It may be so. But one thing seems apparent, and that is, that his whole literary career, and particularly his last visit to this country, when he gave readings in all our prominent cities, was, in plain English, nothing less than a clear *money-getting* speculation.

If England or America had no copyright laws, whereby authors are protected in the products of their fertile brains, I greatly *doubt* whether any of us would have had the *chance* to laugh at the multitude of those grotesque humors of his.

Did Knowles, the irrepressible inventor, spend twenty years in companionship with a single confidential friend, in one single apartment, inventing his wonder of wonders, the Open Shed Loom, *all* from the mere resistless inspiration of his inventive genius? Most decidedly not. The promptitude with which he filed an application in the U. S. Patent Office for a patent on every new idea he had, so as to obtain *immediate* protection, is, in itself, sufficient evidence that the commercial or money value of his various inventions was the *great* consideration with him.

As with him, so it is with every *genuine* inventor; the *money value* of their invention or improvement being the *goal* for which they are all striving.

Many well-meaning persons may doubtless ask, "What good, after all, have patents done?" Well; we have railroads and steam-boats, telegraphs and sewing machines, reaping machines and planters and seeders, shoe machinery and rock drills, electric lamps and telephones, and improvements grave and gay, sober and ridiculous, throughout the whole category of human wants and fancies, from electric engines and mammoth cannon down to jumping-jacks and fly-catchers.

Does any individual who has his *five senses*, or even a lesser number, *believe*, for a single moment, that the inhabitants of this mundane sphere would ever have had these, were it not for that *chance of reward* which the Patent System holds out to the contrivers of them? Why, of course, not.

An inventor's bed is *not* always a bed of *roses*. It more often resembles one made from *thorns*. Just think of the brains, the burning midnight oil, the tireless pluck, the undying hope, the immense sums of money that have been wholly sunk in experiment upon experiment, the thing set up one day only to be smashed the next day in grief and disappointment, and to be tried again the next, the next, and the next. Can it be possible that all this would be done were there no *hope* of receiving pecuniary reward in the end? Never, never. But when "Uncle Sam" says to Jones: "If you are genius enough to invent a way of knitting a pair of stockings for five cents that now cost twenty-five, you shall have the *sole right* to do it, and make whatever you *can* from it for the period of seventeen years; provided you will tell myself how to do it, and leave me free to do it *after* that time," won't friend Jones do it, and apply for a patent? Certainly he will, for it would be for his *interest* to. And I feel assured that there is but little necessity of arguing this matter to people who have so keen an appreciation of "a chance to make a little something" as the inhabitants of this grand Republic.

This is certainly an age of invention, and the rapid strides made in this country during the present century in every conceivable kind of invention is wonderful to contemplate.

For the sake of illustration, we will take up that comparatively simple instrument,—the Plow. All of our improved plows have come up within the memory of men now living. Men not very old can remember the old wooden plow of their boyhood days. Ten to twelve feet long, requiring eight to ten oxen to pull it, one man to hold fast to the handles, another to ride upon the beam to



NORTH HALL OF MODEL ROOM, UNITED STATES PATENT OFFICE.

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keep the plow in the soil, and another one yet to follow along behind to dig up the "baulks;" said "old time plow" really costing more in one *single* year to keep it in repair, than it would *now* cost to buy a bran new improved plow outright.

The first iron plow was made by Charles Newbold, of New Jersey, in the year 1797, and in that same year he obtained a patent therefor. Yet there actually existed among farmers a prejudice against it nearly down to 1840, on the ground that an *iron* plow would *poison* the land. After Newbold's invention, there came on in succession the Nourse plow, and the John Deve, and the Avery, and finally the Oliver Chilled Plow, and the Syracuse Chilled Plow, both of which are said to be the leading plows among the farmers of the Empire State, and regarded as the best of their kind, and are considered capable of saving nearly \$50,000,-000 in one *single* year on the 12,400,649 acres that were *under the plow* in 1880, in that State *alone*.

Equally wonderful, has been the progress of the Corn-Planter in the United States. What does the reader *suppose* the first one was? Why simply a box with a hole in the bottom, strapped on to the hoe-handle; then a hollow hoe-handle designed to hold the seed, and a hole near the lower end that could be opened and closed by a spring. Next, the hand dropper, to be carried one in each hand, and by striking them down one in one row and the other in the next, each stroke made a planting, and so two rows could be planted at once. Then came on the horse-drill or planter. Then the marker, which enabled the rows to be kept in both directions. Then the horse-planter that planted two rows at once, minding the marker. And finally, there came into being, the check row-planter, by which an Illinois farmer could *increase* his acreage in the ten days' planting season, from forty acres to two hundred, thereby enabling a small farmer to become a great one.

There is nothing which so well illustrates the *vast* progress made in the manner of doing farm work in this country within the past fifty years, as the gradual improvement in ways and means for threshing grain. Why! half a century ago we were virtually following in the footsteps of the inhabitants of "Egypt-land," to whom the great law-giver Moses issued the command: "You shall not muzzle the ox that treadeth out the corn." Less than three-score years ago the quickest known method of separating the grain from their heads was by treading it out with horses, or else threshing it out with a flail. Generally, several horses were

driven around a post situated in the centre of a barn floor, while men and boys would ever and anon turn over the partially threshed straw, or else it was beaten out with flails, which had *one thing* in its favor if nothing more, and that was, that the exercise would soon *warm up* a person on a chilly day—*free of cost*.

The farmers opened their eyes somewhat, when the one-horse tread-mill power and thresher put in its appearance, but its days were already numbered, for it could not thresh much faster than by the old “horse treading method,” neither did it thresh the grain as clean. There next appeared the two-horse sweep power and machine which created quite a furore, but, like its predecessor, it failed to thresh the straw clean, and moreover was capable of threshing but a few bushels in a day.

After awhile there came upon the scene the stationary power thresher, in which the sweeps were attached to an upright shaft, on which was a large gear-wheel meshing into smaller ones, connected by a horizontal shaft to a large band-wheel secured in a barn, which operated a thresher situated overhead. This thresher had several advantages over all prior ones, for the platform on which it stood was penetrated with holes and various gratings through which the grain descended to the floor below, while all the straw was carried out through a door or window some distance above the ground, whereby quite an advantage was afforded in stacking the straw. To get up sufficient motion to this machine, it was found necessary to walk the horses used very fast, whereby it was altogether to hard on them; a very grave objection.

Succeeding that, was the movable power, with four horses, which could thresh more in a day, and thresh much cleaner than the former, yet the straw had to be raked from the grain, as it fell behind the thresher, raked and pitched out of the barn door and from there pitched upon a straw-stack; rather severe work when the stack was high. Whenever everything run smoothly, (which rarely happened), 300 to 400 bushels of wheat could be threshed out in a day.

Next, in the order of things, a greatly improved machine appeared, which would actually thresh the grain from the heads of straw, separate the grain from the straw, winnow the chaff from the grain, delivering said grain into a bushel measure or other receptacle, and, by means of a straw-carrier, carrying the straw and chaff out of the barn and onto the stack; all of which was a decidedly great improvement. Yet this new machine

demanded a large number of horses to operate it. First six, then eight, and finally ten horses were found essential as its motive power. While the capacity of the ten horse-power thresher and separator was more than double that of the four horse-power, still, it necessitated the employment of a considerable force of men and horses, which would be quartered on the farmer during threshing; a cause of *dread* to many a farmer, as he and his family would have to provide food and lodging for the threshers, who, by the way, were generally blessed with *voracious* appetites. Accidents to the machine were of frequent occurrence, and it thus happened that quite often threshers were detained at a farm house as long again as would have been necessary, had everything worked all right. All of which was a very serious drawback according to the opinion of a majority of the farmers.

But, at last, a perfect "cure-all" for these various evils or disadvantages was invented and brought into general use,—the steam-power thresher and separator—which *has come to stay*, as it has materially reduced the expenses and aggravation of threshing. Nature's mighty, yet invisible force,—steam, operates an immense thresher and separator with such irresistible and unvarying force that a farmer's grain crop must be a pretty large one to keep one of these threshers going an entire day. One thousand five hundred bushels a day is *possible* with one of these monsters, running from early morn till shades of night, while ten to twelve hundred bushels is an average day's work. Prior to the advent of the steam-power thresher, it was considered necessary to make short runs and to stop every hour or so, to give the horses a rest and enable the help to cave up the grain and clear up the floor, but, under the *present* dispensation this is all done *away* with, for with a plenty of fuel for power, water for steam, and oil to prevent friction, the motive power never tires or wearies, neither does it flag, except for a few brief stops. Although the charges are somewhat high, yet the rapidity with which it works greatly lessens the outlay for board for the threshers and extra help, besides dispensing with horses, whereby, the farmer is greatly *in pocket*, notwithstanding the increased rates for threshing out the grain. Now, the steam thresher is in *general use*, while the "old time" methods have been consigned to *oblivion*.

I venture to assert, that there are many persons who well remember the *old* way of shelling corn: it was a matter of *choice* between two evils. Either sitting *astride* the *handle* of a *barn shovel* or a

*frying-pan*, and scraping the ears of corn across the edge of said shovel or pan; or perhaps merely using the cob of one ear to shell the corn off from another. (And very often *shelling the skin* off your hands at the same time.) By these old-fashioned methods a man could shell about *five* bushels in *ten* hours.

According to the last census, (year 1880), 1,754,861,535 bushels of corn were raised in the United States. The six greatest corn states are Illinois, Iowa, Missouri, Indiana, Ohio and Kansas. The aggregate yield of these six great corn-growing states amounting in 1880 to the grand sum total of 1,136,391,200 bushels. Now, by the *old* method, the *entire* farming community of those six mentioned states, would be *compelled* to *sit astride* of barn-shovels and frying-pans, at the very *lowest* estimate, *one hundred days* out of the year to get their corn *all shelled*.

Who then, *dare* even attempt to calculate the great importance to this country of that very simple, yet extremely valuable invention—the Patent Corn Sheller? Or for that matter, who is there amongst us that can begin to *estimate* the immense *benefits* that the citizens of this Republic have directly received from a considerable portion of the patents granted by the U. S. Patent Office, for inventions relating to everything *imaginable*, from a patent suspender-button up to a mammoth Corliss engine.

## CHAPTER VIII.

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B EYOND all controversy, there are many persons in this country, notably a large proportion of whom belong to our farming population, who appear to believe, in all *sincerity*, that the American Patent System is more or less *hostile* to the people's interests, and the *agricultural* interests in *particular*. Yet they labor under a *great mistake*.

The real facts in the case are, that there is no industry but what has *profited* by the *Patent System*, and none; yes, none! that has so enormously profited by the fruits of the American Patent Laws, and that is so completely *indebted* to our American inventors for its vast development, or, for that matter, for its very *existence* in the face of foreign competition, as that of agriculture.

Verily, from Alpha to Omega,—the plowing of the soil, the planting of the seed, the harvesting of crops, and the carrying it to market,—each and every step is taken by the *aid* which is rendered by *patented* inventions, called into *being* through the encouragement of our liberal patent laws, and which have surely *increased* the value of our agricultural interests at *least* a thousand fold.

The patent laws expressly *forbid* the issue of a patent, except to some one who has actually *created* some new and useful improvement, and thus simply protects an inventor for a *limited* time in the free possession of what, but for him, would have had *no existence*. This principle is the *same* as that which protects *all* property, except that the inventor has *less* protection than any other person who creates it. The farmer levels the forest or breaks the prairie sod, and this originates wealth; and all the profits of that wealth are his or his legal representatives forever. The inventor provides new and improved inventions whereby the farmer can cut down his forests, or plow the soil with one-tenth the labor that was here-

tofore required, and these inventions are *wealth created by the inventor*; but under the law he is protected in the profits of that created wealth for a period of but seventeen years, and *then* it is *public* property.

Thus the cry of *monopoly*, so often raised by certain individuals, is shown to be erroneous; in fact, not the slightest trace of such a thing can be discerned. The inventor takes nothing from the public that it could have *had* without him.

So far from inventors being monopolists, they are benefactors to the public in every respect, and what some patents (which I select from a great many) have done for the community at large, are well worth noticing. And I may observe, in this connection, that the following facts and figures in relation thereto, were, to a great extent, taken from the *official records* of the Patent Office, and must, therefore, be "true as gospel."

After newspapers are printed they must be folded, and years ago this was all performed by hand. But somewhere about the year 1859, Cyrus Chambers began a series of experiments for doing all this by machinery, and in 1874 there were in use seventy-two of his patent "newspaper folders." It cost two dollars a day to run each machine, and each fully accomplished the work of five men. By *hand* the same amount of work cost \$8.75 per day, being a *saving* of \$6.75 per day for each machine; and these newspaper-folders *alone*, during the original term of the patent, effected an economy of labor amounting to one million, one hundred and sixty-five thousand dollars. During the same period the paper-folders for other publications saved in labor *more* than one million dollars,—making from this *one patent alone*, in less than *fourteen* years, a saving of toil and exertion to the human race of more than two million dollars. And for *all time* will this economy continue to *increase* and *multiply*.

The copper-toed shoe for children, once in universal use, made a saving to parents that was estimated at from six to twelve millions of dollars *annually*.

Making horse-shoes by hand costs, on an average, sixteen cents each, *not* counting the *cost* of the iron. Away back in the year 1835, Henry Burden commenced inventing machines for making horse-shoes, and in 1857 patented what was generally considered the *first* really successful machine of the kind; and in 1871 he sold horse-shoes, *iron included*, at four and a half cents *apiece*. Although the absolute benefit of Henry Burden's machine to the

public cannot be well calculated, the *gain* to this Government alone, during the Civil war, amounted to about four millions of dollars. The self-same motive that kept Burden and others to work steadily and persistently,—the *reward* offered by our Patent System,—is continually urging onward and upward thousands upon thousands of intelligent inventors to make improvements of every kind and degree.

While some *few* inventors realize *immense* profits from their inventions, either directly or indirectly, yet the vast majority are doing well, if they make a *good living* off the products of their ingenious minds. David Bruce, the inventor of machines for making type, was a very poor man. From two of his machines he realized \$1,890 out-right. Richard M. Hoe, the inventor of the Hoe printing press, made in fourteen years \$248,000; Waterman received from his process of tempering wire, \$83,000 above all expenses; Thomas Silverthorn, a poor mechanic, sold the patent for his copper-toed shoes to a certain company, for \$67,000. During the term of his 1857 patent, Henry Burden manufactured and sold \$9,000,000 worth of horse-shoes,—realizing a profit thereon of \$900,000. But the amount of capital he employed was immense, and he very frequently worked *eighteen hours* a day for weeks in succession. The inventor of the stylographic pen is said to have already made \$1,000,000; the inventor of the automatic marking pen is happy with a bank account of \$100,000; that favorite toy, the “return ball,” yielded to the patentee an income equal to fair returns on \$500,000; that rubber tip upon the ends of a vast number of lead pencils affords the owner of the royalty an independent fortune; the individual that invented gummed newspaper wrappers is said to be a very rich man; while the toy popularly known as the “dancing Jim Crow,” provides for its inventor an annual income of \$20,000; and it is said that Plimpton, the inventor of the guidable roller-skate, has received from his popular invention at least \$1,000,000, but in Great Britain he had to expend \$125,000 in fighting infringers of his patent.

The possibly immense profits that may be derived from *good* patents, are prizes tempting enough to *urge* inventors to the most *persistent* efforts. Yet, when we compare the benefit *obtained* by the successful inventor with the benefit *conferred* to the *public*, it is clearly seen that the former's benefits amount to but a minute percentage of the latter's, even during the *lifetime* of the patent,—while, at the *expiration* of the patent-period, the *entire* invention

goes to the public at large. I will give a few illustrations to *prove* the correctness of this assertion.

About thirty years ago, every bale of cotton was bound with ropes, and, consequently, in case of a conflagration, the ropes would burn and drop off, the bales burst, and the light airy masses of cotton would easily catch a fire and burn like tinder. As to extinguishing a fire in a vessel laden with cotton or a cotton ware-house it was *almost* an impossibility. But in the year 1858, Frederick Cook patented the metallic bale-tie, provided with an open slot, and others have followed in his footsteps, until, at present, nearly



UNITED STATES PATENT OFFICE.

[VIEW FROM THE CORNER OF F AND 9TH STREETS.]

every cotton bale is bound with iron bands, the ends of which are secured by patent bale-ties. By the use of these "patent ties" the bales are kept hard and compact, wherefore in case of fire they burn but slowly, and their bulk is materially diminished for transportation; thereby adding one dollar to the value of every bale of cotton, equal to a *net gain* to the public of four millions of dollars yearly.

From 1858 up to the year 1871, Cook's device was in actual use upon one million five hundred thousand bales, thus showing the real value of his invention to the public, for said period, to have been a million and a half of dollars. And Cook received from his patent only four thousand seven hundred and ninety-five dollars.

Base-burning stoves are to be found in nearly every home, and being an invention so well known, the results of *one* patent, out of many relating to this class, is well worthy of notice. 170,000 to 200,000 base-burning stoves, made according to S. B. Saxton's patent of 1859, were put into public use, and their superiority as compared with former base-burners, was demonstrated to be a dollar and a half each, making its total value to the public about \$275,000, while during that period, the inventor's profits were just \$22,394.19. So it may be plainly seen, that while Saxton was making *less* than one dollar from his invention, the community at large was making *twelve*.

The wire fastening for bottle-stoppers, patented in 1864, by Henry W. Putnam, which *apparently* was a rather *simple* thing, sold for one dollar and a half per gross, or a little over a penny a piece. Yet the great saving in labor that it caused by dispensing with the tying of corks in soda-water bottles, alone amounted to *nine* millions of dollars in *nine* years, estimating labor at \$1.25 a day. And how much do you suppose the inventor *made* out of it in the same period? Only twenty thousand dollars. Thus, while upon an average the inventor was realizing one hundred cents from his bottle-stopper fastening, the general public were making four hundred and fifty dollars on each one.

About twenty-eight years ago, a certain inventor, who from his own personal experience knew what a trial it was to attempt to remove the glass chimney from a kerosene lamp while hot, and who moreover fully realized the loss of time, money and patience that resulted in said attempt so far as regarded the lamp-burners then in use; set himself to work to invent a burner that would do away with all those drawbacks. For months and months he diligently labored upon his self assigned task, made his own tools to work with, borrowed money of friends whenever he possibly could, became broken down in health from over work, for two months was kept in a darkened room under a physician's care, nearly lost his eye-sight from his constant study of lamp-flames, and finally—*SUCCESS* crowned his untiring efforts, and he produced an improved lamp-burner in which the chimney could be *taken off while hot*; securing his letters patent in the month of February, 1861: What then? Why, other manufacturers well comprehending the *immense* value of his discovery and the *revolution* it necessarily would make in burners, commenced infringing on his patent. He defended and fought for his rights in Court, and he was fully sus-

tained. Consequently, the infringers agreed to pay him for the right to use his invention, and how much do you suppose they agreed to give? *One-half* of a cent royalty on *each* burner. The value of this invention was how much? Let us see. A kerosene lamp-burner usually lasts about three years, and it was shown that this improved burner saved in *breakage* at least *eight* chimneys a year, or twenty-four chimneys for every burner sold. Lamp-chimneys at wholesale are worth about six cents each. Consequently, while this invention yielded the people of this country about one dollar and a half, the *yield* to the patentee was a *half of a cent apiece*. What at first glance, might appear to be a "little thing" in the way of an invention, proved to be of immense value, both to the public and the inventor, for, up to January, 1875, about ten millions of these particular burners had been sold, whereby the aggregate *saving* to the public was fourteen million four hundred thousand dollars. But this was only the amount saved in *money*. The *gain* to the community in avoidance of accident and perfect immunity from burning their fingers, was immense. The inventor, Charles M. Cahoon, received in royalties, as *his* share, sixty thousand dollars.

In olden times when a tin can was once soldered up, it was a *difficult* matter to open it. In the year 1859, John W. Masury conceived the novel idea of making a portion of the *cover* of extremely *thin metal*, such as to be readily *cut through* with a *knife*. It is claimed that ten millions of these cans are made annually. Why, the Borden Condensed Milk Company used ten thousand each and every working day in the year, while in the paint trade, it is extensively used for putting up liquid ready-mixed paints. Masury required a royalty of one-quarter of a cent per pound can, while the gain to the public was a hundred fold.

The double hand-stamps, patented about twenty-eight years ago, whereby stamps are canceled and letters post-marked, by just a stroke of one hand, saved to this Government in one year *alone*, the salaries of two hundred and fifty-four clerks at from \$700 to \$900 each, or more than \$200,000 a year.

There is no disputing the fact that, McCormick's reaper made harvesting a *perfect* success. In certain portions of the "Great West," where some of his machines were first introduced, it was shown, under oath, that the *increase* in the production of grain was not *less* than one hundred per cent.; for the labor of those sections could *not* harvest by the "old time" methods more than *one-half*

of what the soil was really *capable* of yielding. It is one-half easier work to sow than it is to reap, so, by the old methods, if all the seed was sown that *could be*, one-half of the crop would have to *rot* on the ground, for *lack* of labor and time to attend to it. On an average, McCormick's reaper will last ten years, and in that time ordinarily cuts two thousand acres of grain. Thus each machine *saved* to the *user* in labor *alone*, at least five hundred dollars, besides paying its original cost; and in this very way, up to 1859 the saving of labor to our farming population amounted to over thirty-six millions of dollars. The increase in the grain crop up to said date, *due* to McCormick's invention, was one hundred millions of dollars. McCormick took out several patents, and up to 1859, had devoted at least twenty-seven years to his various improvements. Within that period, he *paid out*, one million, eight hundred and sixty-five thousand, two hundred and seventy-eight dollars. In that time, he *received* from manufacturers' profits and royalties, \$2,527,692, leaving him a *clear profit* of \$662,414. In a quarter of a century he made for *himself* half a million of dollars, but his invention yields to this *country* annually, ten millions of dollars, and will continue to do so, as long as "King Agriculture" reigns over the boundless fertile prairies of the "Great West."

John H. Manny, the inventor of the first *successful* combined reaper and mower, and whom, by the way, secured thirteen patents in all, realized from his invention about \$283,000, which was quite a snug sum; *yet* at the same time, Manny's machines in fourteen years *saved* to our farming population nearly *thirty* millions of dollars.

While in some cases, inventors have made considerable from their inventions, it should be remembered that, during the very same period the public have reaped the *greater* reward. And while an inventor's profits *cease* upon the expiration of his patent, the American people *enjoy* the benefits conferred, for *all time*.

The views of Hon. Benjamin Butterworth, late Commissioner of Patents, (set forth in a letter to a National Convention of Inventors, held at Cincinnati, Ohio), regarding the patent system and our agricultural interests, are so *apt* and *pertinent* in every respect, that I cannot well forbear from making a few quotations. He says:—

"I want to notice for a moment the objections urged against the patent system by some of those who are most interested in sustaining it. I refer to the agriculturalists,

"I submit that no man need *use* an article of modern improvement *unless* he finds it to *his interest* to do so. We may still plow with a wooden mould-board. We may still drop corn with the fingers and cover it with the hoe. We may still sow wheat broadcast and eschew the drill. And we may cut grain, wheat and oats with the sickle, or, if our opposition to improvements is not radical, we may use the cradle. We may leave the reaper and mower, the raker and binder, severely alone, if we choose, we may then resolutely thresh the grain with the flail or tramp it out with horses. We are under no obligation whatever to use a thresher, and not the slightest to use a cleaner and separator. We may still haul our crops to market in jolt-wagons. There rests upon us no legal obligation to utilize the railroad. None of us are compelled to use the telegraph. We may, in case of sickness, send fifty miles by messenger on a horse for a doctor, and bring him back in the same manner; and if the patient dies before he arrives, the relatives and friends need not be summoned by telegraph, or come by railroad. They can be advised by the postman and come in the old way, if at all. And in the meantime the corpse can be kept on ice, provided the ice is not manufactured by one of those patent ice machines. It is the right of the citizen to drown, if he prefers it, to being saved through the instrumentality of one of those patent life-saving contrivances which are in common use along the coast. It is my lawful right, if I own a coal mine, to draw the coal up with the old-fashioned windlass, instead of using steam power and modern appliances. I have an equal right to toil up seven stories in a hotel, instead of riding up in one of those patent elevators. I can pay a dollar a rod to fence my farm with posts and boards, instead of using barbed-wire at half the cost.

"What I want to show *is* that the blood-bought privileges of *sticking* to the "old way" remain to us, in spite of the patent law. Had we better do this?—better stick to the old way, or *encourage* the genius of invention and improve our methods, lightening our labors, increase our comforts, embellish our homes and add thus to the sum of our happiness?

"But these patents levy on the people. Yes, they levy a dime and in return give a dollar, and often ten. I can mention half a dozen inventions which alone have saved more to the people of the United States than our whole population have paid in the shape of tax and royalty to inventors since the foundation of our government, and more than they will pay in the next century. I may name the

cotton gin, the spinning jenny, the power loom, the locomotive, the telegraph, the reaper and mower. Then let me add the power printing press. All, except one, with their aids and auxiliaries, have been produced and perfected in *less* than a generation,—*less* than fifty years. By the old method, there are *not* adult laborers enough in all the Southern States, to prepare the present cotton crop for the loom. By the *old* methods, it would take *all* the adult laborers of the North to plant, tend and gather the crops. Not a shop or factory could be *spared* a man or woman. These assertions are *not* guesses nor wild assumptions, but the result of *careful* investigation.

"I am *astonished* at the continual complaint made that the agriculturalist is oppressively taxed and burdened by our patent system; and this in the face of the *fact* that but for the hives of industry, the busy marts of our great cities, which have their origin and growth in the production of the machines, implements, tools and appliances, which are the fruits of the inventor's study, research, experiment and labors, the business of farming would *not* be *worth* following—there would be *no market*."

There are some persons who, while they may admit the entire *truth* of the views embraced in the foregoing, will still *assert* that the American patent system *tends* to throw working men out of employment, as well as reducing in a considerable degree their wages.

Touching that point, no *better* answer is required than that given by Hon. Benjamin Butterworth, embraced in the annual report of said Commissioner of Patents to Congress, upon January 31, 1885.

The learned gentleman says:—

"Touching the statement that laborers are thrown out of employment and wages reduced by the use of patented devices, it is sufficient to say that the allegation is entirely at variance with the best information obtainable from the returns of the last census. The utilization of valuable inventions does *not* throw laborers out of employment, but redistributes labor, and opens up *new* avenues of employment, calls into requisition a *higher* order of skill, and secures an *increase* of wages. For example, take the boot and shoe industry, where a few hundred machines have *changed* the whole course of labor. The census of 1870 showed that there was an average of twenty-nine persons employed in every shoe-factory in this country, whereas in 1880 there were fifty-six persons so employed. The persons in 1875 made three times as many shoes

as in 1845. In a table prepared by Colonel Wright, chief of the Bureau of Labor, it is shown that in 1870 there were employed 91,702 men, women, and children, while in 1880, there were 111,152. In estimates based upon four hundred and sixty shoe-manufacturing establishments in Massachusetts, it is shown that three millions of dollars *more* are paid in *wages* than the capital invested, and that the labor-saving machinery has given to the laborers in 1880 almost *double* the wages of 1850.

"But for the growth of our industries due to the patent system there would have been no employment in this country, otherwise than in the *fields*, for ten per cent. of the immigrants who have come among us. While an important invention may result in utilizing a patent machine which will do the work of a dozen men, the result is to *open up* an avenue of employment which will give work to *double* the number. The comforts and conveniences of life are made more abundant and cheaper, the consumption larger."

Such views as those, coming from so high and competent authority as a United States Commissioner of Patents, ought to, and *must*, have great *weight* with every one who is desirous of knowing the *real* facts of the case.

We can *never afford* to *dispense* with our grand American patent-system,—a system that has *aroused* to untiring energy the inventive genius of the people, as well as conferred immeasurable benefits upon us *all*,—and which will continue to *increase*, and confer untold blessings upon the heads of our children and our childrens' children, and those that come after,—a system, destined, I believe, to be as *lasting* and *enduring* as our Republic *itself*.

## CHAPTER IX.

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**G**REAT, is the antiquity of invention !

The *first* invention in the history of the world was an extremely simple though useful contrivance,—a *needle*.

It is an open question whether the credit of this invention is due to Adam or to Eve; but we *do* know that the Bible says, “They sewed fig leaves together and made themselves aprons.”

For them to have sewed, without using the needle, would have been utterly impossible, therefore they *must* have invented one; but, whether from a thorn or a fish-bone, is a matter of conjecture.

This being true, how very ancient is the trade of dress-making; and viewing a woman of to-day, we can but reflect that every particle of her dress and finery is due to the thought, industry and perseverance of dress-makers from the present time way down the ages for nearly six thousand years. And that being the case, is it to be *wondered* at that she *is* “fearfully and wonderfully made?”

Wine was invented by Father Noah 2,347, B. C. The flute came into existence 1506, B. C. A citizen of Greece invented the game of Backgammon 1224, B. C. Organs 220, B. C. And Nero played upon the bag-pipe in the year 51 Anno Domini. Carpets were in use 800 B. C. Glass in use 1490 B. C. Bricks were manufactured 2247 B. C. Wheat bread was known to the Chinese about 3860 years ago. While a Mr. Finley, a dentist in London, England, *claims* to have found a *filled tooth* in the jaw of an Egyptian Mummy; consequently dentistry was further advanced 4000 years ago in Egypt, than is generally supposed.

The mariner’s compass was invented in the year 1302 A. D. Gun powder about 1320. Air guns and muskets about 1400. Pumps 1425. Playing cards were invented in France in 1332 to



THE GREAT PATENT OFFICE FIRE, SEPTEMBER 24, 1877.

SCENE DURING THE HEIGHT OF THE CONFLAMMATION.

amuse Charles VI. during the intervals of a melancholy disorder. Spectacles in 1280. Oldest clock 1348. At Gibraltar, cannon were used in 1308. First printing by Gutenberg about 1440. First watch 1477. First newspaper 1631 (in France). Lightning rods were first used in 1752. Thermometer invented 1600. First balloon in 1783. James Watt discovered the power of steam in 1750. The first mail by coaches was in England August 2d, 1784. First passenger steamboat invented by Robert Fulton 1807. First steam railroad was built in 1830, from Baltimore to Ellicott's Mills, Maryland. And the first telegraph line in America, by Prof. Morse, 1844.

In Assyria, 504 years before the Christian era, the inhabitants are said to have used the first seeding or planting machine in existence. It was a decidedly rude agricultural implement compared with the wonderful machines that are in use to-day. The mould-board, and opener of this Assyrian Drill Plow were made from a round stick of very tough wood, to which handles and a tongue were attached. At the rear of a plow point was attached a hopper, resembling a bowl in shape, which was supported by a hollow standard, through which the seed passed into the furrow; the seed being covered up by the turned furrow falling back upon it. The various parts were firmly secured together by ropes.

How many persons are there, who are aware of the *antiquity* of the writing-paper known as "Foolscap," as well as how it originated? Not many, I am sure. Well! this is "foolscap's" true history: During the reign of King Charles I, of England, a large number of monopolies were granted, mostly to the King's particular favorites, for the support of the English government; and among them was one granted for the exclusive manufacture of paper. Upon the finest variety the water-mark represented the Royal Arms of Great Britain. When the Rump Parliament came into being, this, among other monopolies, (one being the manufacture of salt,) was entirely done away with by the Parliament that ordered King Charles to the scaffold. To show their *contempt* for the Ex-King they ordered that the water-mark of the Royal Arms should be taken from the paper, and that in lieu thereof there should be *substituted* "a fool with his cap and bells." More than two centuries have passed since the fool's cap was taken from off this paper, yet the paper of that size, which that Parliament used in their deliberations, *still* bears the *name* of the water-mark placed there to show their contempt and derision of said King.

While the improved electric telephones of this day and generation are, undoubtedly, *new*, and of immense *value* to our civilization, yet, Bell, Edison, and the hosts of other inventors who have *dabbled* to a greater or less extent in them, must "acknowledge the corn," which is, that the telephone in its *rudimentary* state, was in *actual use* in the Celestial Empire long *prior* to its discovery in this country. The first Chinese telephones of which we have any definite account, were constructed a long time ago. One was the invention of a noble Chinaman by the name of Chiang Shuihsin, who resided in the province of Huichou, during the reign of Kiang-hsi, which was about one hundred and fifty years ago. This inventive Chinaman was well-read, and thoroughly at home in science, astronomy, etc. This product of Chinese ingenuity, styled the "thousand-mile speaker," was described by the historian of that time, as "a roll of copper, likened to a fife, containing an artful device; whispered into and immediately closed, the confined message, however long, may be conveyed to any distance; and thus in a battle, secret instructions may be conveniently communicated."

As at this time no trace can be found of such an instrument, it would *seem* to have perished at about the same time that its ingenious inventor bid adieu to his earthly career. But, although the before mentioned device appears to be now extinct, there is *now in use* in one or two of the Chinese provinces, and has been from time immemorial, an odd device, in reality a toy, which consists of a couple of bamboo cylinders, about two inches in diameter, and four inches in length, one end of which is closed by a tympanum of bladder, in which there is a hole designed for the insertion of the transmitting string, which is retained in place by being knotted. This rude instrument is designated "listening tubes," and is capable of conveying whispers a distance of fifty feet.

Parchment has been in use for ages; but it was not until the year 1125, that we find any mention made of linen paper. At that date, however, frequent mention is made of it. The oldest known fragment of linen paper in *existence* is that upon which the Sire de Joinville wrote a letter to King Louis X, in 1315. When we look around about us and see the gigantic proportions of our paper industries,—the multitude of paper-mills, the immense capital invested, and the army of employees required,—we can fully appreciate the *truth* of the old adage, "Great oaks from little acorns grow."

Every prominent manufacturer has imprinted upon the goods manufactured by him, some peculiar mark, design, or symbol, adopted as his trade-mark, and in which he is protected under the law, whereby he may be protected from imposition by rival manufacturers, and by which the general public will *know* that they are getting goods of his manufacture through familiarity with his adopted trade-mark. But is this a new or original idea that has been developed by the civilization of the Nineteenth century? No; not at all. Away back in the history of the human race trademarks were in use. Even ancient Babylon used property symbols, and the Celestials claim that trade-marks were in use in the Celestial Empire one thousand years *prior* to the advent of our Saviour upon earth. And Gutenberg, the inventor of the art of printing, was engaged in a law-suit regarding a trade-mark,—and *won* the suit. Coming down to more recent times, we discover that in the year 1300, the British Parliament authorized the use of trademarks, and protected the users. And under our own patent laws, trademarks and labels receive all necessary protection.

Truly, the antiquity of invention is great. But what comparison will the inventions of the ancients bear beside the inventions of our American inventors of the present day? A rather poor one. Our inventions have benefitted every condition of society and all conditions of mankind; have accelerated the progress of our innumerable industries; have increased the resources of this nation a thousand-fold more than would have been possible without them; they have provided a means whereby a poor man may oftentimes climb to the topmost round of the social ladder, realizing fame, fortune, and position; and they have added in a wonderful degree to the wealth of the agriculturist as well as the manufacturer. And it is to our American Patent System that you and I are *indebted* for all this; for without it, civilization would *never* have taken the rapid *strides* that it has; but, on the *contrary*, we would *now* be occupying the position of our ancestors,—and *not* a century or so in *advance* of that period.

Much has been accomplished; but in the *future*, a great deal more than we even dream of now, will be done in the line of invention, and consequently, in civilization.

Indeed, when we stop to think of the possibilities which may develop into realities, by means of inventions that are *yet to come*, we cannot grasp the situation, and the imagination is completely overwhelmed; more than that,—is *staggered*.

## CHAPTER X.

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UNDoubtedly, the *earliest* patent granted in the history of this country, was that granted by the Commonwealth of Massachusetts, for "a method of manufacturing salt."

In this patent it was provided, that "None are to make this article except in a different manner from his, provided he sets up his works within a year."

The General Court of said Commonwealth, in 1652, allowed John Clark "ten shillings for three years for every family that should use his method for saving wood and warming houses at little cost." Clark renewed his valuable(?) patent, and enjoyed its benefits the remainder of his lifetime.

The *first* seed planter upon which a patent was granted by the U. S. Patent Office, was in 1799, when, on January 25, of said year, a patent was granted therefor, to a certain Eliakim Spooner, of Vermont. At this present date about 100,000 seeding implements of various kinds are manufactured yearly in this country. What a *wonderful* growth since friend Spooner's patent !

Can you lend me a pin ? How often that is heard; but how few of those who make that request know when the *first pins* were made in this country. The War of 1812 witnessed the entire suspension of importations from the Mother Country, and, as a consequence, pins became exceedingly scarce, and in many cases were sold as high as *one dollar a paper*, by wholesale. Efforts were then made to introduce their manufacture into the Colonies. Accordingly, some pin-makers came from England, bringing with them the necessary implements, and commenced the business in the old State's prison, at Greenwich, N. Y., employing convict labor, the business being conducted by a Mr. Haynes. And in 1832 a U. S. Patent for the first *pin* machine put into operation in these United States, was granted to John J. Howe.

These few examples will suffice to show at what period of time the *birth* of American inventions occurred.

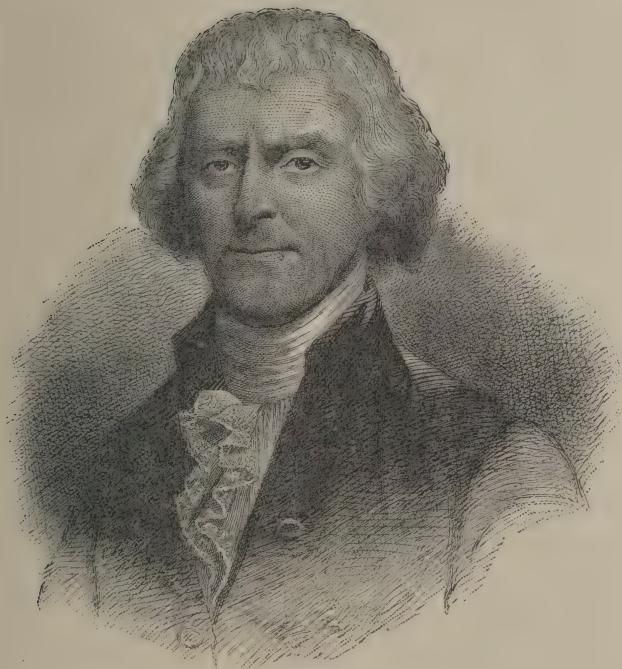
In consequence of the War of 1812, the people of this country were really *forced* to attempt the manufacture of many articles, especially those of *necessity*, nearly all of which were prior to that time imported from England. And what has been the result? The most remarkable development of human ingenuity ever witnessed in the history of the human race.

Prior to the adoption of the Federal Constitution, a few of the states, or provincial governments granted to certain inventors certain privileges, but for various reasons they proved to be of comparatively small value.

#### BUT A NEW ERA WAS DAWNING.

Congress on the 10th day of April, 1790, passed the act whereby our American Patent System was founded. Thomas Jefferson inspired it, and he may justly be considered the "Father of the United States Patent Office." It is said that he took great pride and interest in it, and additionally, that he gave his *personal* consideration to *every* application for a patent that was made from 1790 to the year 1793.

In those early days of our Patent Office, the granting of a patent was considered quite an event in the Department of State, where the clerical work pertaining to the issuing of patents was at that time performed. Jefferson's all absorbing interest in patents is well demonstrated from a tradition handed down to us from a former generation, in which it is stated, that when an application was made, he would summon as members of an "examining tribunal," Henry Knox, of Massachusetts, who was Secretary of War, and Edmund Randolph, of Virginia, who was Attorney General; Jefferson himself, making the third member, and these three distinguished gentlemen would carefully examine into and determine the *patentability* of the various applications filed. In those times every move in the direction of granting any inventor a patent, was taken cautiously and carefully, so impressed was Jefferson and his associates with the extraordinary *importance* involved therein. They meant well, but undoubtedly erred in being a little *too* cautious, for the result of their examinations the first year resulted in the grant of *three* patents. In 1791 thirty-three patents were granted, 1792 the number was eleven, and in



*Th. Jefferson*

THE "FATHER OF THE U. S. PATENT OFFICE."

1793 there were twenty all told. All of these were issued under the Patent Act of 1790.

During these years, the *cost* to inventors for applying for patents was virtually *next to nothing*, and the inventor of to-day, after looking over the schedule of fees, must agree with me in this view, and *smile*. “For receiving and filing the petition, fifty cents, for filing specifications, per sheet of 100 words, 10 cents; for making out the patent two dollars; for affixing the great seal one dollar; for delivering the same to the patentee twenty cents.” *Total cost* of a patent being about \$5. (Now, the entire charge by the government is, in ordinary cases, \$35.) All patents at that time required the signature of the President to make them all complete. Presidents nowadays should be exceedingly thankful that patents do not require the autograph of the Chief Executive,—’twould make a *little* more work.

The Patent Act of 1790, proving defective in several particulars, Congress on February 24, 1793, passed a new Act, which went into effect the ensuing year. Under this act as formerly, the control of the patent business was still held by the Department of State.

From 1790 to 1802, the entire records of the Patent Office were contained in a *dozen pigeon-holes*, and *one* State Department clerk performed *all* the clerical work pertaining thereto. In the latter year, a certain Dr. Thornton (a somewhat eccentric genius) was appointed to the office, and held his position for twenty-six years, styling himself during that period its “Superintendent.” He was an exceedingly brave and courageous individual, if tradition can be relied on; the story being as follows:—

When, during the war of 1812, the British troops captured Washington city, destroying the Capitol Building and other edifices, a loaded cannon was placed in position before the Patent Office with the intention of destroying it also. But Dr. Thornton was *not* the man to stand calmly by and see havoc made with the department of which he had charge, and accordingly he rushed forward, placed himself directly in *front* of the gun, and in a perfect frenzy of excitement exclaimed:—“Are you Englishmen, or only Goths and Vandals? This is the Patent Office, a depository of the ingenuity and inventions of the American Nation, in which the whole civilized world is interested. Would you destroy it? If so, *fire away*, and let the charge pass through my body.” Such a magical effect did this oration have upon the soldiery, that they

immediately went their way—sparing the building from destruction.

In the year 1810 the new General Post Office was built, and one part thereof was assigned for the use of the “Office of the Keeper of the Patents,” and other necessary requirements of the patent business.

The year 1836 witnessed the re-organization of the Patent Office, with a commissioner, chief clerk, one patent examiner, one draughtsman, two clerks, one messenger, and a machinist—*eight* persons in all. But there were actually in existence at that time, certain niggardly individuals, who found fault with the new organization, on the ground that the employment of eight people in the Patent Office was sheer extravagance.

On the 15th of December, 1836, at an early hour in the morning, the General Post Office was discovered to be in flames, and while many things were saved from the Post Office proper, not a single thing was saved from the Patent Office, save *one* worthless book from the library. Congress went to work to discover the origin of the fire, and when the evidence of at least thirty-two persons had been taken, came to the conclusion, (a bright one too), that the fire originated in the cellar underneath the City Post Office, but in which room they were unable to say with certainty. A correspondent of a daily paper of that time attributed the cause of the fire to a box in which were stored hot ashes.

That this conflagration served a *good* purpose, is self-evident, from the fact that it stirred up Congress to a realization of the necessity there existed for the immediate construction of a fire-proof building for the use of the Patent Office, and accordingly, in compliance with an Act of Congress of 1836, steps were at once taken for the erection of a Patent Office building.

The foundation of the new building was begun in the fall of 1836, and is the present building facing on F street, minus the 9th street, 7th street and G street wings. This wing, or main building, was completed in the spring of 1840, at a cost of over four hundred thousand dollars. And shortly thereafter the Patent Office took possession.

The constant yearly growth in the business of the Patent Office, necessitated additional room, and on March 3d, 1849, Congress made an appropriation of \$50,000, out of the patent fund, with which to begin the east, or 7th street, wing, and the year 1852 witnessed its completion at a total cost of \$600,000.

But, so rapid had been the growth of the patent business in the meantime, that hardly had the east wing of the building been finished and occupied, before it became very evident that more room was absolutely necessary to meet the growing demands of the patent system. Accordingly on August 31, 1852, Congress passed an act providing for the erection of the west or 9th street wing, with an appropriation of \$150,000 to start with, and in 1856 it was completed at a total cost of \$750,000. But again, the cry of "more room" was raised, and as a result thereof, the north or G street wing was started, and completed in 1867, at an outlay of \$575,000, thereby making the *total cost* of the entire building up to that period, including furniture and repairs, nearly *three millions* of dollars. Yet it was money well spent,—a building of grand proportions, massive in construction, and one of the most beautiful structures conceivable, being the result.

## CHAPTER XI.

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WE are an inventive people. Moreover, invention is by no means confined to any particular class. Our mechanics invent, our merchants invent, our soldiers and sailors invent, our schoolmasters invent, our professional men invent, and so do our women and children. And to clearly demonstrate that we *are* a nation of inventors, it is but necessary to compare the force of the United States Patent Office in the year 1836, and the number of patents granted, with that of the present time.

Then, the entire force of the Patent Office consisted of eight persons, and only a few hundred inventions were patented in the course of a year. Now, we have a commissioner, assistant commissioner, chief clerk, over one hundred examiners, and upwards of four hundred other employees; and inventions come into the Patent Office at the rate of from 30,000 to 35,000 a year, while of that number 20,000, and more, receive the protection of the Government.

In the year 1887 the total receipts of the Patent Office derived from inventors and others, amounted to the enormous sum of \$1,144,509.60. Compare *that* with the total receipts of the Patent Office in the year 1837, which were \$29,289.08, and one can form *some* idea of the immense *growth* of the patent system of this country. Again, the expense of carrying on the Patent Office amounted to \$4,217.90, *more* than was *received* by the office in said year; while in 1887 the receipts of the Patent Office *exceeded* the expenditures of the year by \$150,037.38; which amount represents the *profits* derived by "Uncle Sam" from the U. S. Patent Office in that *one* year *alone*. And, since its foundation, it has earned, over and above all its *expenses*, over *three and a quarter millions* of dollars, and this amount represents but an insignificant part of

the sum it has placed to the credit of the wealth of this nation. And during said period upwards of 400,000 *patents* have been granted. More than this, the Patent Office is one of the most important branches of our public service, as in one form or another it deals with a greater number of the people of this country than any other department of the Government, and its operations affect, either directly or indirectly, at least nine-tenths of the American people.

Our inventors come into the Patent Office requesting the granting of patents for every imaginable thing under the sun, there being nothing too small or too great, upon which to exercise their inventive faculties. They invent for everyone, and *forget nobody*. And so great is the diversity of inventions, that they are sure to meet each, and all, of the miscellaneous and multitudinal wants of the people of this great nation.

Let us, (in imagination), stand at the portals of the Patent Office building, most any week-day in the year, and view the various inventions that come into the office in a *single day*, from all the points of the compass,—from the Atlantic to the Pacific, and from the Great Lakes to the Gulf,—as well as from every portion of our civilized globe, and see what a variety of objects are being offered at the Patent Office “shrine” by those enthusiastic devotees,—inventors.

First, half a dozen churns come into view, accompanied by one single dasher. Churn-dasher certainly has his hands full. Next, quite a delegation of that old prolific class, “car-couplings,” pass along, linked together arm-in-arm. Then some railway cars come gliding in, each claiming to be the best one of its kind. Now a large procession of agricultural implements come strolling by,—grain-binders and plows, harvesters and cultivators, scoops and shovels, corn-shellers and potato-diggers,—all of which attest the never-ending wants of our farming community. And here several fire-escapes pass into the open doorway, gliding rapidly along. And now observe the quickened speed with which, in various shapes, electricity passes through, serene in its own consciousness, of its great worth to all mankind. And here, in twos, and threes, and fours, come rambling by things for the thrifty housewife’s help—mixers, and beaters, and lemon-squeezers, weighing-scales and kitchen implements, sad-irons and machines for washing clothes. And for those household pets—the children, pass us now in quick succession, dolls and little cribs for dolls, rocking-horses and toy

chairs, building-blocks and little cannon, and banks to save their pennies in. And now come journeying in, inventions of every kind and style, designed to aid and help our engineers and cabinet-makers, blacksmiths and printers, dentists and carriage-makers, makers of shoes, and watches, too; and thus they pass before our view, day in, day out, 'tis all the same.

Inventions are most numerous in agricultural implements and household conveniences. Of agricultural inventions, the greatest number is from the West; of inventions in manufactures, from New England and New York.

Odd as it may appear, the applications for patents form a curious *index* to the *mind* of the country. In fact, there really are what may be properly termed "Epidemics of Invention." In this country, whatever interest is dominant for the time being, is always unerringly indicated by the business of the Patent Office; for it is, in reality, the *finger* upon the *pulse* of the nation, and counting its heart-beats. During the late Civil war, inventions and improvements in everything that could in any way be used in war, completely overwhelmed the Patent Office. There is never a fire, but what is followed by numerous inventions in fire-escapes and heating apparatus; never a great burglary but is almost immediately followed by different inventions in burglar-proof safes, vaults, or locks, or burglar-alarms. And hardly a kerosene accident but brings out improvements in lamp-burners. And during the late epidemic of roller-skating, scarcely a week went by but what developed one or more inventions in roller-skates. And thus it goes through the *entire* catalogue of inventions.

To illustrate: Only a few years ago there was a universal demand for some sure protection for the dead, and even now that demand exists, though to a less extent. Many persons who are of no use to themselves, or anybody else, while *alive*, are nevertheless very often in great demand after they have bid adieu to this life, and are consigned to their last(?) resting-place. The grave is not always "a place of rest," nor the "last of earth."

Very frequently a millionaire's grave is robbed of its occupant for the purpose of demanding from his survivors a snug sum of money for its return. A person who has suffered for years with some mysterious disease, may make up his mind that his body will not find safe repose in any ordinary grave; for the M. D. who was unable to clearly understand his patient's malady while living, will doubtless desire to continue his researches after he is gone. And

even those who are what might be termed "ordinary individuals" are in more or less danger from professional grave-robbers. As a consequence, the public have eagerly craved for some efficient way in which to protect graves, and inventors by the score have set their wits to work to devise methods by which the desired results might be accomplished.

An Iowa individual proposes to fill the space around the coffin with hydraulic cement, which, in a short time, will become so hardened that it cannot be broken without using a blast of powder; while a worthy citizen of Cincinnati, Ohio, has patented a coffin-safe, designed to protect the remains of the "departed" from the emissaries of the dissecting-room of medical colleges. It consists of a safe somewhat larger than the coffin, and is composed of bars of wrought iron. In filling the grave, dirt passes between those bars in such quantities that it would be absolutely impossible for the safe to be lifted out except by the aid of a derrick.

While in the meantime, a certain New York man actually patented a coffin torpedo, designed to totally exterminate grave robbers. This contrivance consists of a canister containing powder, balls and a trigger, so constructed and arranged, that it will cause the torpedo to suddenly explode should any "robber" open the coffin-lid.

But, perhaps the most summary way of disposing of grave robbers, is that designed by a Massachusetts genius. His plan is to put a charge of dynamite in an occupied grave, so that a touch of the robbers spade would cause its explosion. This would be first-rate so far as the robber was concerned, but the great drawback to his invention is that the explosion *might* prove equally severe upon the occupants of graves, the neighboring tomb-stones, and also the fences and shrubbery.

One more example, illustrative of a *particular* epidemic of invention, and which was the outgrowth of the late popular craze,—roller-skating.

The roller-skate is undoubtedly of French origin, for away back in the year 1819 we find that a patent on a roller-skate was granted by France. And from that date to the year 1863, just nine patents were issued for that class of skates. Three were French, three English, and three American. But as every single one of them had their wheels set in fixed sockets, whereby they run only in a direction parallel with the length of the skate, none

of these skates proved in actual use to be either practical or successful.

It was not until the year 1863 that a skate was invented which was capable of being used by a skater in going through the motions that could be performed upon ice-skates. In that year, James L. Plimpton, of New York City, patented the *guidable* roller-skate. This was a new and valuable improvement in attaching the rollers to the stock or foot-stand of the skate, whereby the rollers were made to turn or cant by the rocking of the stock or foot-stand, so as to facilitate the turning of the skate on the floor, and admit of the skater's performing with ease, gyrations or revolutions without testing unduly the muscles of the foot or ankles. In 1865 and 1866 he made further improvements upon his successful roller-skate, making more perfect than ever the first *practical* roller-skate invented. Thus you may see, that the roller-skate of to-day, is, in reality, a "Yankee invention."

Plimpton obtained patents upon his skate in England, and about fifteen years ago a regular roller-skating craze prevailed throughout the Kingdom; in fact, at one period our English cousins had over 400 places for roller-skating.

Friend Plimpton had "a hard row to hoe" over the sea, for although he had invested considerable capital, and had met with unparalleled success, he soon found himself confronted by quite an army of infringers, who, jealous of his prosperity and success, tried to reap a harvest for themselves, as well. But he was "clear grit" for he fought them in the English courts and won his suits. These trials attracted immense attention, and were attended by large crowds. And although his legal expenses were enormous, still he made immense profits.

In this country as well, he had considerable litigation over his guidable skate, but he always came out with flying colors. And, although his American patents expired in June, 1883, he still retains his interest in roller-skating, although depreciating the disreputable surroundings that have of late been connected with it in some localities. One thing is certain; from his inventive skill and industry, as well as business tact, he has amassed a fortune sufficient to place him at his ease during the remainder of his life.

Our recent craze of roller-skating, was by no means the first, in this country. It was the *third* craze of the kind, but the two former ones were of comparatively short duration, and of limited

extent. The year 1872 witnessed one craze, and the year 1876 another; while away back in 1865 roller-skating was in vogue in a few localities.

But, subsequent to June, 1883, there was developed the greatest and most stupendous craze of all, and due in a great measure to this fact, viz.:—Plimpton's broad invention having expired, every inventor of the roller-skate, or improvement upon Plimpton's, could secure a patent, and be entirely free from any liability for infringement upon him, as his invention was now *public property*. Various roller-skate inventors, who had been patiently awaiting the expiration of the broad Plimpton patent, now rushed into the Patent Office with their applications, others followed suit, advertising followed, skates dropped in price, and in a very short period the latest and greatest roller-skating craze of the century was upon us. Hardly a week passed by but witnessed the grant of one or more patents for roller-skates, in fact, since 1866 somewhere in the neighborhood of six or seven hundred *patents* have been granted for roller-skates. And up to the year 1886, in every city, and in nearly every village and hamlet throughout the Union, there could be found roller-skating rinks, which were daily and nightly patronized by all classes of society.

Before concluding this chapter, it may be well to add that there are *two* certain classes of invention which are epidemic in this country year in and year out, and upon which the average inventor devotes more time and study than upon anything else. I refer to *car-couplings* and *churns*, for, up to the present time, over 2,000 patents have been granted for churning alone; while the prolific class of car-couplings far exceeds the churning, over 4,000 patents on car-couplings having been issued.

As an inventive nation, we lead the world. An approximation to the whole number of patents ever issued for strictly *mechanical* inventions in civilized countries, would give, in my opinion, to the United States 350,000; Great Britain 250,000; France 150,000; all other countries together 130,000; and these figures give a good *idea* of the industrial progress of our world during the century. While a careful investigation will positively demonstrate that the progress in mechanics has been just about in proportion to the number of patents granted.

## CHAPTER XII.

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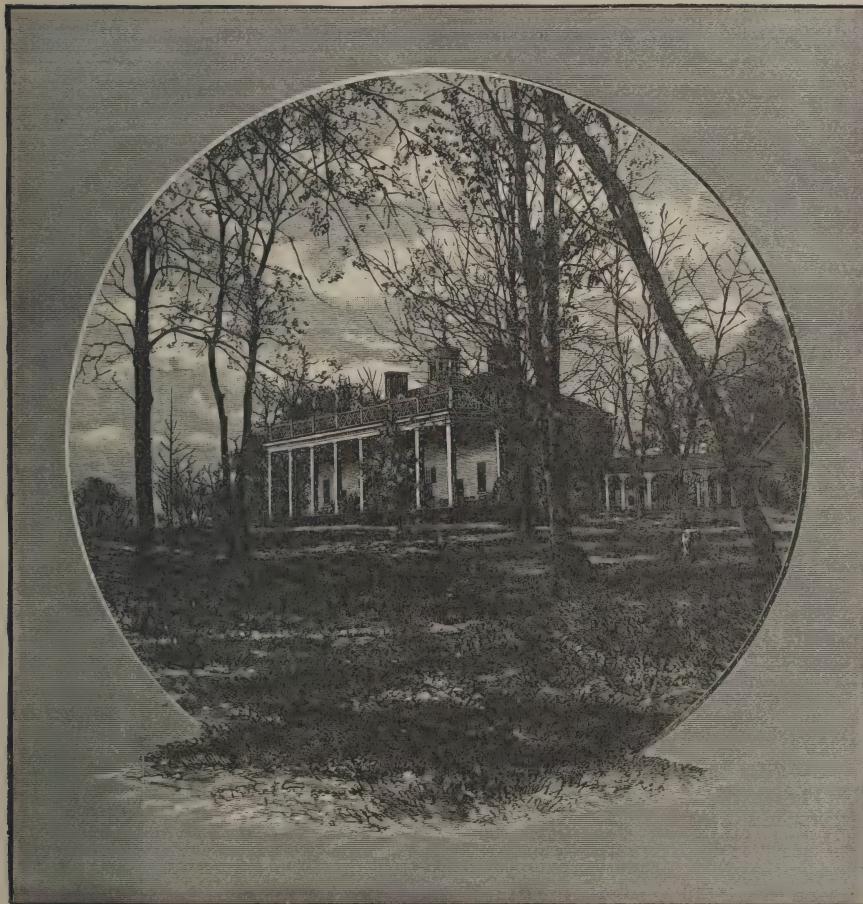
**I**N that beautiful and magnificent city, named after that great patriot, who was "first in war, first in peace, and first in the hearts of his countrymen," stands a building that is an object of *more than ordinary* interest to every American, and particularly so to all American inventors,—The United States Patent Office.

The Patent Office building is certainly one of the finest among the numerous grand and costly government buildings in the "city of magnificent distances," and it deeply impresses the beholder as being supremely grand, no matter from what point he may view it. It occupies two entire squares, and, as it looms up before you, its magnificent proportions must greatly please everybody who has an eye for the beautiful in man's handiwork, as well as in nature's.

This majestic monument to the inventive genius of our Republic, expands and towers into space almost unapproachable in majestic grandeur. It matters not from which direction you approach it, for on either of its four sides, your vision will rest upon grand and lofty porticos, that rest upon double rows of Doric columns eighteen feet in circumference, formed of the purest marble. The architectural design of the entire building is that of the Doric order, strong, simple and majestic. In the first story of the building there is a large hall that extends entirely around the building, on either side of which are rooms that are used for a variety of purposes connected with the business of the Patent Office. Advancing to the second floor, there is a similar, though more spacious hall or passage, bordered upon either side with rooms that are used by the Commissioner of Patents and other high officials, as well as the examiners and various other employees of the department.

But one of the *chief* objects of *interest* to a visitor is the Model Room,—the exhibition room of an inventive nation. It occupies the entire third floor of the building, and, for the purpose for which it was designed, it is, without doubt, unequalled and unapproachable in any portion of the civilized globe. Entrance to this story is made by means of a spacious marble stair-case, of easy ascent. Ascending it, we enter a doorway, and find ourselves in the Model Room, and from where we stand we can look down a vista nearly 275 feet in length, and whose perspective must surely gratify and please the sight. A succession of arches, nicely proportioned, rest upon a double row of magnificent stone pillars. The floor is of crystalized marble, and the room is well lighted by numerous windows upon either side. In handsome glass cases on either side of the room are arranged, in a very systematic manner, the multitude of models, etc., that have been forwarded to the Patent Office by inventors throughout the Union. The cases, of which there are two rows, are arranged one above the other, the upper row being supported by an iron gallery, substantially built, and of ornamental design, while access is had to it by means of light iron stair-cases placed at intervals throughout the hall. The ceiling of the Model Room, which is handsomely finished in marble, as well as beautifully frescoed, is supported by a double row of finely proportioned stone columns, while the walls of the room are also finished with exquisite taste.

It is, however, the historic *relics*, that have for a period of many years reposed in this grand exhibition room, that form the chief objects of interest to every visitor, and it is to them we will now turn our attention. On the right of the main entrance to the Model Room, there is a case containing the printing press that was used by Benjamin Franklin, at the time that he worked as a journeyman printer, in London, England, over a century ago. This peculiar looking press is old, dilapidated, and worm-eaten, and would surely *fall to pieces* were it not held together by a multitude of bolts and iron plates. This odd piece of machinery, which gave but 130 impressions an hour, does not resemble in the least the mighty machines in use to-day, some of which, the Hoe press for instance, is capable of printing an edition of from 115,000 to 130,000 copies inside of four and a half hours, as was demonstrated by actual test in a prominent New York newspaper establishment not long ago.



THE HOME OF GEORGE WASHINGTON.

MOUNT VERNON, ON THE POTOMAC.

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Neighboring cases contain billiard-tables, ice-cutters, fire-escapes, fire-arms, and a variety of novel and amusing toys. Passing over to the opposite side of the main hall, we come upon numerous other cases containing more models of various kinds of machinery, etc.

Continuing on our way, we soon approach some cases whose contents are of the *greatest* interest to every true American, and well worthy of the greatest *veneration* by every lover of his country,—the Washington relics. These are amongst the greatest treasures of this great Republic, and well deserve our most careful inspection and study. These intrinsic relics of our first President, are in the exact condition in which he left them at the close of the War of Independence, and were confided to the care of this government for safe keeping, after his death. In one of the cases are the tents that were used by him during the Revolutionary War, and which constituted his headquarters. After the surrender of Lord Cornwallis at Yorktown, on the 19th day of October, 1781, which event virtually ended the war of independence; these tents were carefully packed away, never again to be spread upon the field, either in camp or battle. The large sized tent was used for general purposes, while the smaller one was devoted exclusively to Washington's private use. It was in this tent that he retired when he desired to meditate, as well as write his letters and dispatches; and in one portion was a sort of sleeping apartment, wherein he slept. Exactly as the tents were wrapped about the tent-poles, and tied together for the last time after the victory at Yorktown; do they still *remain*. Every tent-pin, cord and button is in its proper place, for Washington was careful and precise in even matters of the most *minute* detail. His chairs are in good condition, and not even a round is broken, much less missing. His blankets and the curtains to his bed, (for in those days every bed had its curtain), and which was worked for him by the nimble fingers of his loving helpmate, and also his window curtains are in a good state of preservation; and the odd little looking-glass he used, is not even so much as cracked. His knives and forks, which have plain horn handles, and repose in a knife-case; and his mess-chest, and the wash-stand and pitcher are fairly preserved, and well worth attention. The various cooking utensils, bellows, andirons, and strong and compact iron treasure-box, all of which were in *daily* use in his journey from Boston to Yorktown, and which are in the same case, are in first-class order.

And near at hand, is the suit of clothes that he wore upon the occasion of his resigning his commission as "Commander-in-Chief" of the army, which occurred at Annapolis, Maryland, in 1783. It was on December 24th of that same year, that George Washington, once more a private citizen, arrived at his beautiful home, Mount Vernon, on the south bank of the noble Potomac; and divested himself *forever* of the military clothing which had been worn by him throughout the greater part of the War of Independence. During the remainder of his life they were preserved by him with the greatest care, and they are to-day in *almost* as good condition as they were when the "Father of his Country" laid them aside for the last time. The coat which is formed of cloth of a dark blue color, has a facing made of yellow cloth known as buff, and is ornamented with rather large, yet perfectly plain, gilt buttons. And of this same kind of buff cloth the waist-coat and breeches are also made. Occupying the same case, is Washington's trusty sword, the one that he wore throughout the closing period of the War of the Revolution. It is a sort of hanger, enclosed in a scabbard of dark leather. The handle, which is of fine ivory, is of a pale greenish hue, and its spiral grooves are wound with pure silver wire. The sword-belt, which is made of white leather, is neatly finished with silver mountings. Accompanying this historic sword, is a black cane, of considerable length, with a gold head of peculiar design, which was devised to George Washington by Benjamin Franklin, by the clause in his Will which read as follows: "My fine crab-tree walking-stick, with a gold head curiously wrought in the form of a cap of liberty, I give to my friend, and the friend of mankind, General Washington." The beautiful ode by Morris, the Revolutionary Poet, in reference to these two historic relics is so *expressive* and appropriate, that I reproduce it for the gratification of my readers:

## THE SWORD AND THE STAFF.

## I.

"The sword of the Hero,  
The staff of the Sage,  
Whose valor and wisdom  
Are stamp'd on the age,  
Time-hallowed mementoes  
Of those who have riven  
The sceptre from tyrants,  
‘The lightning from heaven.’"

## II.

‘ This weapon, O, Freedom,  
Was drawn by thy son,  
And it never was sheathed  
Till the battle was won;  
No stain of dishonor  
Upon it we see;  
' Twas never surrendered,  
Except to the free.”

## III.

“ While Fame claims the hero  
And patriot sage,  
Their names to emblazon  
On History's page,  
No holier relics  
Will Liberty hoard,  
Than Franklin's staff, guarded  
By Washington's sword.”

In other cases, near at hand, we find the Original Treaties of this Government with various foreign countries. These treaties are written upon parchment, which are greatly worn, and considerably faded. With the exception of Great Britain and a few other nations, the treaties are written in French, and all of them are ornamented with a large number of different-colored seals. Various Oriental articles, many of which are quite handsome, and which were presented by foreign powers to former Presidents and other high officials, at different times, are in the cases that are partly occupied by the treaties. A small portion of the *first* Atlantic cable, connecting America with the Old World, is near by, and the peculiar manner in which it is made, merits one's attention. Andrew Jackson's military coat, and which was worn by the “Old War Horse” at the Battle of New Orleans, which occurred on January 8, 1815, is another of the interesting relics upon exhibition. And the decorated panels which were taken from the “old-time coach” that was used by President Washington upon State occasions, are in themselves quite an interesting study. It was on July 4, 1776, that the “Declaration of Independence” was adopted and signed by each of the members of the Continental Congress, whereby the American Colonies, thirteen in number, cast off their allegiance to the “Mother Country” and declared themselves an independent people. Little did the Patriots who signed that

Declaration of Freedom over a hundred years ago, imagine, or even dream, of the historical associations that would spring up about it, much less, that it would be viewed by thousands in a



WHERE PRESIDENT LINCOLN WAS SHOT.

FORMERLY FORD'S THEATRE; RECENTLY ARMY MEDICAL MUSEUM.

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magnificent city, then not even dreamt of. Yet here it is, the original Declaration of Independence, enclosed in a frame, and in close proximity to the Washington relics. It looks old and yellow, and the writing is slowly, yet surely, fading from the paper. And in another frame near by is Washington's commission as Com-

mander-in-Chief of the American Army, and which is signed in the large, bold hand-writing of John Hancock, President of the Continental Congress. And in a case right at hand, is a model showing the frame-work of a steamboat, and which illustrates a way to sink and raise boats by means of bellows placed in the hold. The model is rather roughly executed. The illustrious inventor of this novel device is one whose name is *familiar throughout civilization*,—Abraham Lincoln. The patent was issued to him on the 30th of May, 1849, about twelve years prior to his entering the “White House” as our Chief Magistrate. And now we come to a memento of him that revives saddened recollections in our minds,—the hat that was worn by President Lincoln on the night of his assassination. At 10:30 in the evening, on April 14, 1865, and while occupying a private-box in Ford’s Theatre, Washington, Wilkes Booth entered and fired the fatal shot. And at 7:20 the following morning, Lincoln breathed his last. And close at hand, a pair of handsome buckskin gloves are discerned. They *were* to have been presented to our “Martyred President,” but they did not arrive in Washington city until *after* his death. There is a card pinned to them, on which we read this inscription: “As a fit memento for the unsullied hands for which they were intended.” And further on we observe an American flag, which was the *first* Union flag hoisted by any citizen of the seceding Southern States, *after* the commencement of actual warfare; and a frame near by contains a lock of hair of each of the fourteen Chief Magistrates, from George Washington down to Franklin Pierce, inclusive. The multitude of glass cases that occupy the remainder of space in the four immense halls comprising the Model Room of the Patent Office, are filled with a miscellaneous assortment of models illustrating inventions of every conceivable kind and degree; many of them of intricate and novel construction, and deserving the attention of the visitor to the Patent Office.

[NOTE.—Since this particular chapter was written, a portion of the objects mentioned therein have been transferred to the National Museum, situated a short distance from the Patent Office building. This does not, however, detract from the interest of the Model Room, nor the associations clustered about it, to any appreciable degree.—AUTHOR.]

## CHAPTER XIII.

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**F**IRES! Fire!! Fire!!! were the words that loudly resounded forth from the lips of numerous persons, in the vicinity of the United States Patent Office, while meanwhile the sentinel bells were giving forth an alarm of fire,—a few moments past eleven o'clock on Monday, September 24, 1877. Hardly had the reverberations of the fire-bells' first alarm died away, ere that certain signal of a great conflagration,—a second or a general alarm, calling forth every fire-engine in the city,—broke upon the air, while like prairie fire the news spread throughout Washington City that the Patent Office was in flames. Yet, even then, but little attention was given the rumor by many persons; for it seemed incredible, that a building which was popularly presumed to be virtually fire-proof, stood in much, if any, danger from fire. Yet, nevertheless, the mere fact that so important and imposing an edifice as the Patent Office was on fire, created *intense excitement*, and soon thousands of interested spectators were grouped about the burning building, filling streets and alleyways, steps and telegraph poles, while windows and housetops, in close proximity, were alive with eager and expectant observers. The fire-engines, and the crowding, struggling, mass of humanity, arrived on the ground at about the same time, while to the firemen and spectators alike, the scene that rose up before them was as unexpected as it was gloomy and appalling. But so *confident* were the officials, clerks, and other employees of the Office, in the *security* of the building against *fire*, that, for some time the alarm did not create great apprehension, either as to the safety of the Patent Office building or its contents. However, the black columns of smoke that were soon seen issuing from the roof of the edifice, followed by showers of fiery flying cinders, speedily *convinced* the

inmates, as well as the thousands in the surrounding streets, that a serious fire had *begun* its work.

Within *twenty minutes* after the discovery of the fire, lurid flames were sweeping over the *entire* third story of the west wing of the building, bursting through the windows and various portions of the roof with a ferocity that threatened destruction to the entire building. For the first half hour the efforts of the firemen to stay the progress of the flames seemed of no avail, and so serious did matters *look*, that telegrams were dispatched to Baltimore and Alexandria, requesting immediate aid from their fire departments. In an incredibly short time the Alexandria engine arrived and went to work, performing good service. Baltimore generously responded with four fire-engines, which were quickly transported by rail, by special train, and soon they were on the ground, rendering the most efficient aid in subduing the flames.

Firemen perched upon ladders placed against the building, carried lines of hose upward and onto the roof, into which holes were cut, and streams of water were poured into the upper stories, while in the corridors of the building men worked hard to remove valuable records to places of safety, and brave fire-laddies, stationed on ladders outside the burning building, fought with great steadfastness and perseverance the flames that were engulfing the Model Room halls on the north and west sides of the structure. The Patent Office officials, were everywhere present, adopting measures to save all the valuable public property from danger of destruction, while hundreds of the faithful employees carried their wishes into effect, working with rapidity, energy and zeal; while their fidelity and untiring efforts to save and protect the archives, etc., of the office, deserved, and *received*, the highest commendation from all sides.

The Draftsman's Division, containing the most *important* records of the Patent Office, was situated directly beneath a portion of the west wing of the Model Room, while two large ventilators ran from the rooms of that division directly up into the burning portion. There soon came pouring down those ventilators a shower of live coals and molten metal, threatening the destruction of the office, as well as rendering the task of removing the records and drawings to a place of safety, an exceedingly difficult and dangerous one. Brave men took in the situation at a glance, and while one employee stepped up beneath one of the ventilators with a *coal scuttle*, in which to catch the fiery fragments, another held a



APPEARANCE OF THE WEST HALL OF THE MODEL ROOM,  
IMMEDIATELY AFTER THE GREAT PATENT OFFICE FIRE OF SEPTEMBER 24TH, 1877.

*water-cooler* beneath the remaining ventilating shaft, while other willing hands labored with assiduity to remove the valuable records to other parts of the building. The 211,243 original drawings, that were of priceless value, were all removed, and after the fire replaced, without losing *one single drawing*, while in every part of the exposed portions of the building, the work of removing the archives and furniture was prosecuted with great vigor. Every possible endeavor was made to save the thousands of models which were contained in glass cases in the west and north halls of the Model Room, but without success, as but very few of them were saved, for, by the time it was understood that the entire west hall was in great danger from the flames, that hall was enveloped in the embrace of the fiery monster, while the intense heat and stifling smoke rendered futile any efforts in saving models in the north hall.

Thrilling and exciting was the scene when the fire was at its height, while its *sublimity* impressed every spectator. Throughout the corridors of the building, innumerable clerks were working with *almost* superhuman strength and vigor to save property whose value to the Nation and its inventors could *not* be estimated in money. Books, papers, models, and furniture, lined the corridors of the first and second floors. The flames, the smoke, the long lines of hose running up the various stairs, the streams of water that came pouring back adown the stairways, resembling miniature cascades, and forming grim and blackened pools of water upon the marble floor, *all* added to the novelty of the scene, while the throbbing fire-engines, the armed watchmen, the patrols of mounted and unmounted police, the crowded background of an excited and anxious populace, formed a *realistic* picture, that once seen, could *never* be forgotten.

Devoutly thankful were the officials, the employees, and the immense concourse of people, when they observed, shortly after the commencement of the fire, that a brisk south breeze had sprung up, for, while it drove the flames resistlessly along the roof and west hall of the Model Room, it *protected* the south or main hall, in which were deposited priceless treasures of historic interest,—among which were the Washington relics, Franklin's printing press, Jackson's coat, etc., etc., all of which were thereby *spared* to the American people.

The *crisis* of the fire was reached shortly before one o'clock in the afternoon, when the breeze increased to a miniature gale, and,

so great was its fury that it drove the flames under the roof and through the model-halls at the corner of 9th and G streets, and a few minutes later the fiery element appeared to spring in a *single moment* continuously through the immense roof as far as 8th street —a whole block in length. Upon the roofs of the stores and dwellings on 9th and G streets, (all of which faced the Patent Office), men were busily engaged in pouring water upon the smoking fronts, or tearing down awnings and other inflammable material from windows and doorways, while the spectators who had at the commencement of the fire occupied the roofs and balconies as a vantage ground, had all withdrawn to more distant and cooler places of observation. Upward and over across G street the flames leaped and curled in fantastic shapes, while the *intensity* of the heat drove firemen and lookers-on off the opposite walk and buildings. Confused crowds rushed along, jolting one another, in their anxiety to *escape* the scorching heat, while the fire-engine stationed on the corner of 8th and G streets, was expeditiously removed further from the building.

Slowly, yet surely, the prevailing breeze moderated, the flaming roof dropped suddenly out of sight, and then, there was but little doubt, but that the further progress of the flames would be *prevented*. Persistently, laboriously, and in a systemized manner, the brave fire laddies continued their heroic endeavors to prevent the further spread of the flames, and, a little after two o'clock it was *evident* that the fire would be stayed at the eastern end of the G street hall of the Model Room, and in a few moments thereafter the signal was given that *all danger* was at an *end*, thereby insuring the safety of the east and south halls. Such being the case, the employees of the building commenced replacing the books, papers, drawings, etc., back to their proper places; soldiers, marines and militia continued to guard the building and surroundings, while the firemen still kept at work. Such was the scene that presented itself when darkness commenced to set in.

The scenes witnessed *outside* the building during the *night* hours, were decidedly strange, as well as dramatic. A majority of the lookers-on had retired from the scene of the fire, somewhat fatigued, to seek rest at their respective abodes. Small columns of smoke lazily ascended skywards. The fire engines, now coated with soot and dirt, still retained their positions, sending streams of water upon the still smoldering embers of the destroyed Model Rooms, while their constant hum and intermittent whistling were

the only sounds that broke the stillness of the night. Firemen, all smoke begrimed, stood about the engines, while here and there were groups of curious people who watched with evident interest the tireless energy of these unique and wonderful creation of man's handiwork. Water, in miniature lakes, formed in the gutters, and in the hollows of the street and sidewalks. The guards paced their rounds—back and forth, challenging all intruders with promptness. Messengers with hasty steps passed in and out the various entrances to the building, while the silvery orb of night shone with resplendent grandeur upon the blackened walls and through the window-spaces, causing the same to strikingly resemble a ruin of ancient times, that had had by the aid of an Alladin's lamp, been noiselessly transferred into the midst of the quiet Capital City.

Weird and unusual were the scenes to be witnessed *inside* the saved portions of the building at *night*. Rows of tallow candles dimly lit the various corridors. In water, ankle-deep, stood workmen sweeping it along toward the stairways, whence it poured down in immense quantities. Books, papers, drawings and furniture had been piled in the dryest spots to protect them from the water, which dripped from numerous places in the ceilings overhead, while various ingenious means were employed by which to collect and conduct the falling water from the rooms into the corridors. Employees carrying lights in their hands, hurriedly splashed through the standing water, each so *intent* on their particular duty, as to scarcely observe whom they met or passed. In the main entrance hall on F street, and in various other rooms in the uninjured portion of the building, employees were re-arranging valuable books and papers, which they were to a certain extent responsible for, while the head officials for the department were also on hand, exercising a general supervision over the whole. It was nearly daybreak before matters were in such shape as to warrant even a temporary respite in the labors of the officials and employees of the Patent Office, then, while the chief officials sought brief repose upon couches in various rooms, the under clerks and other help *snatched* what sleep they could upon desks, tables, and elsewhere.

With the dawn of day, came vast numbers of people, all drawn to the spot from motives, as varied as were the classes or the conditions of society that they represented. Crowds collected about the east and south entrances, eager for admission to the building, that they might *see* with their *own eyes* the extent of the damage

to the burned portions of the edifice, and their persistency proved a severe tax to the patience of the watchmen stationed at said entrances. Scores of people could be seen in the approaches to the burned portion of the Model Room, intently viewing the débris and the ruins, while on the outside, by the south-west corner of the building, a large crowd, comprising both sexes, all ages, and all colors, were busily engaged in helping themselves to water-soaked and scorched copies of papers and photo-lithograph drawings which had been cast out of the windows, as so much rubbish. Working-men to the number of hundreds, stood around the main entrances of the building, eager to assist in removing the débris from the burned Model-Halls, or assist in erecting a temporary roof thereon, and there they remained until they were informed that no more help could be advantageously employed, than was already engaged.

And as they walked away, the sad disheartened look upon their faces told more plainly than words their dire extremities.

The scene presented in the morning in the interior of the building was indeed a *gloomy* one. Water was still running along the corridors and pouring down the stairways. Through the thick brick arches composing the ceiling of the second story, it had forced its way, thereby flooding the various rooms on that floor in both the 9th and G Street Wings. The rooms occupied by various prominent officials of the Patent Office, situated on this floor, suffered severe damage, while in the uninjured portion of the building, desks, books, furniture, carpets, and all the necessary things for office requirements, were piled in various nooks and corners. Yet there was nearly the same energy in arranging them in their proper places as was shown on the previous day when they were there deposited, whereby in a comparatively brief period this chaotic condition of affairs gave way to perfect *order*, thus allowing the general business of this important branch of the Government service to proceed, with but temporary interruption.

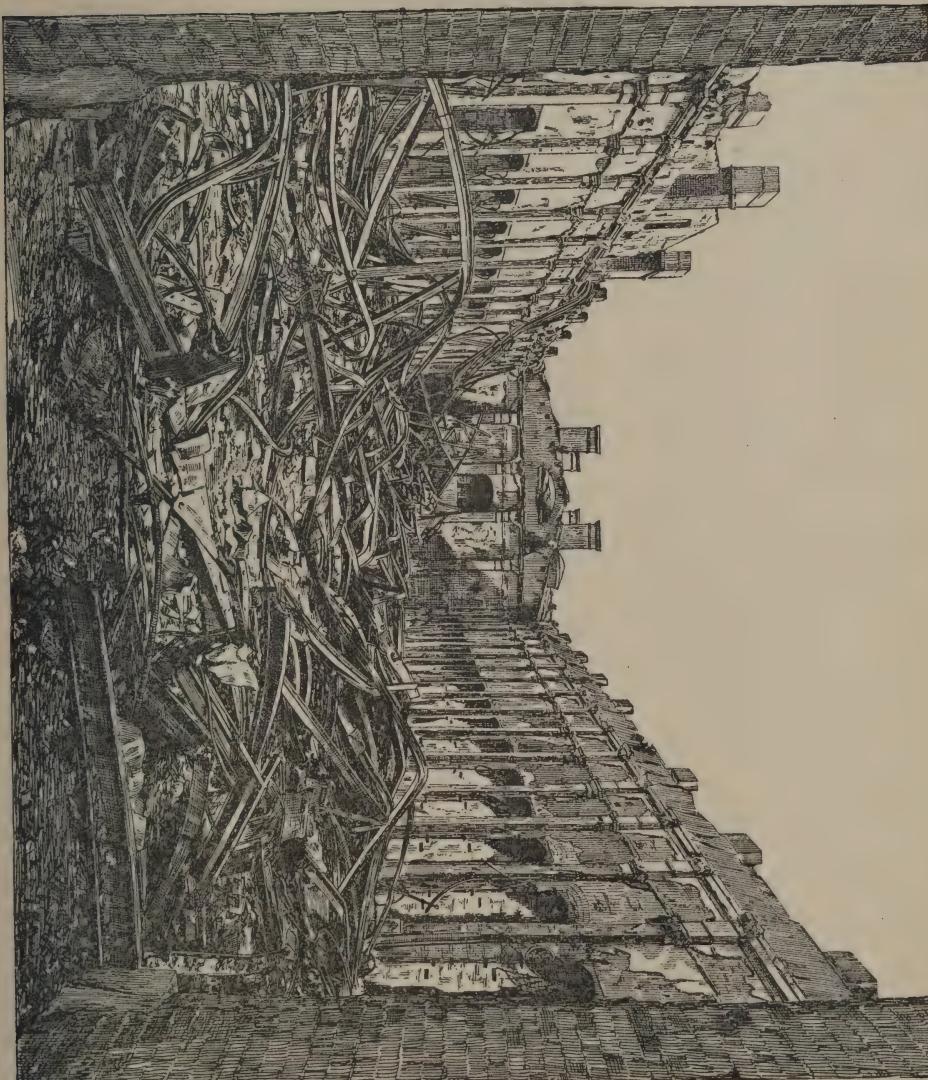
As soon as possible, steps were taken to ascertain the exact amount of damage to the building and contents by the fire. It was found that the roof and the Model Rooms and contents on the north and west sides were totally destroyed. In all, about 87,000 models were burned, while about 600,000 photo-lithographic copies of drawings were consumed or rendered valueless, and a few original drawings were also burned. Although the loss was a very *serious* one to the Nation, one that could *not* be estimated in dollars and cents, still, the visitor to the Patent Office at this date

would not realize from the present appearance of the Model Room that there had *ever* been a conflagration. The halls and roof have been restored to a *better* condition than they were in, prior to the great fire, while the new cases are well filled with models that have been received since that period.

As the Patent Office building was universally considered a *fire-proof* structure, the natural inquiry would be this—how could such a so-called fire proof edifice so easily catch a-fire, and becoming ignited, why *did* it extend to proportions so destructive. That the reader may clearly understand the matter, I will briefly describe the construction of that portion of the building in which the fire originated, and from whence it spread, and, for the sake of perfect accuracy, I quote, from certain official sources, as follows:—

“The roof was what is commonly known as a truss roof. The tie-rods, rafters, braces, and struts were of iron. The purlines, trusses, sheathing and ceiling were constructed of pine wood. The pine sheathing of the roof was covered with sheet-copper about one-fortieth of an inch in thickness. The chimney-tops were of iron, set over the flues upon a brick wall, about twelve inches below the roof, and they extended above the roof about two and a half feet. Over the gutters, running around the entire wing, was placed a pine grating, to keep them from clogging up in the winter and protect them from the heat of the sun in summer. This grating was made of inch boards fastened together by cross-pieces of two and three inch scantling, and it was constructed in sections four feet in width and ten feet in length.

“Under the roof on the Ninth-street or west wing was located a conservatory, or hot-house, used for the purpose of preserving plants in winter. The walls of this room were made of 7-8 inch boards, tongued and grooved; the floor was made of planks, resting on the ceiling of the Model Room, and was covered with zinc, and the roof of the room was of glass. Wooden shelves were arranged for the accommodation of the plants, and just outside there was a small tank, from which necessary water was obtained. The only door leading from the conservatory was on the east side of the roof. Just north of the conservatory was a space occupied by the rejected models and exhibits. In this space, extending from the conservatory to the G-street or north wing, were stored about 12,000 rejected models. The law permits the Commissioner of Patents to sell these models after they have been two years in the office, or to loan them to colleges or other literary and scientific



APPEARANCE OF THE NORTH HALL OF THE MODEL ROOM,

IMMEDIATELY AFTER THE GREAT PATENT OFFICE FIRE OF SEPTEMBER 24TH, 1877.

institutions, or to return them to applicants. About four years ago a distribution of them was made, only a few of the most important ones being retained.

"Those which were in this space at the time of the fire, were the accumulations of the past four years, and were awaiting the disposition the Commissioner of Patents had in contemplation. The staging and flooring of this loft, as well as the conservatory and its surroundings, were of very inflammable material. It is stated by the contractor that more than 100,000 feet of white pine lumber was used in the construction of the roof of the west wing, exclusive of the immense amount of the same material that had found its way into this part of the building in making room of the office for space. The ceiling of the Model Room was also liable to speedy destruction by fire. Instead of iron and brick forming the frame-work above this valuable repository, wooden timbers with an occasional iron brace, were used, and they were covered with ordinary lath and plaster.

"The Model Room comprised the whole of the third story, immediately under the inflammable roof we have described, and consisted of four grand halls, opening into each other and affording a promenade of about one-fourth of a mile around the four sides of the quadrangle.

"These magnificent halls were fitted up with tiers of cases, the room being sufficiently high for two tiers, one above the other. Each case was eight feet in height by from sixteen to twenty feet in length. They were made of white pine with glass sides and ends"

The reader will readily agree with me, that there were on hand all the requisites essential to a great conflagration, overhanging a building *presumably* fire-proof, and which required but a *spark* to originate a more or less destructive fire.

There was the inflammable roof and loft, and four immense halls filled with upwards of 200,000 models which would burn like tinder; while there was no means for successfully flooding the floors in case of emergency.

It has never been definitely settled as to the exact manner in which the fire originated. The conclusion that was arrived at by a committee appointed by the Secretary of the Interior, was, that it caught in the wooden grating, (which extended over the gutters of the roof,) from a spark from the chimney, gradually burning

through the copper sheathing, and thereby igniting the wooden portion of the roof lying beneath said sheathing.

Still another theory, which had many advocates was, that the fire originated in the rejected model-room, from a defective chimney flue immediately over the southeast corner of the western portico of the building, and close to the conservatory, or hot-house, from the sky-light of which the smoke appeared to issue with the most force and greatest volume, upon the first discovery of the fire. Those employees who were first to ascend the Patent Office roof, asserted that a section of the wooden grating was already wrapped in flames, while clouds of smoke of great density were issuing from the skylights along nearly the entire length of the roof, while the copper sheathing was so hot, that the heat was plainly felt through their shoe-soles as they walked over the roof.

It was truly miraculous that the beautiful edifice escaped even a more destructive and serious conflagration, and, had the stiff breeze which prevailed at the commencement of the fire continued, there was great danger of the combustible portions of the entire structure succumbing to the devouring element, notwithstanding the heroic efforts of the firemen to prevent so great a calamity. As the restored portions are constructed in a bona-fide fire-proof manner, there is *no reason* to ever again expect a conflagration threatening destruction and ruin to that noble building,—the Mecca of every enthusiastic inventor,—the United States Patent Office.

## CHAPTER XIV.

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EVERY individual who invents, or who strives to perfect an invention, whether successful in his undertaking or not, is fairly entitled to the greatest *praise* and *commendation* from his fellow-men. There are thousands of inventions in existence to day, considered valueless by the general public, which, were they in the hands of practical business men, would prove of great use and benefit, as well as a source of profit to the owners.

As a rule, inventions are an *innovation* on present customs and usages, and are, consequently, a step in *advance* of our present thought. Why, think of it!—one hundred years ago, or even less, had anybody even *breathed* the suggestion that a person could stand at his own fireside and enter into conversation with a friend one hundred or more miles away, he would have been considered nonsensical, to say the least. Had any one at that time made the assertion that mail-matter would be transported from New York city to Chicago in a day, it would have caused an incredulous *smile* upon the face of every listener; and had any one ventured to predict that messages would be sent on electricity's wing beneath thousands of miles of ocean from this to other countries, he would have been *laughed to scorn*; while the possibility of a day fast approaching, when there would be found in household, workshop, and factory a *machine* that would *sew*, had never been thought of. The fact of the matter is, these, and numerous other inventions of immense value, were steps *far in advance* of the thought or knowledge of those “olden days,” and it does not militate against the discoveries that made all those things *possible*, that the dull brains of the masses could not comprehend nor appreciate them until they were in practical use throughout the world. The farther the inventor is in advance of the present knowledge of the masses, the

greater, proportionately, will be the opposition and prejudice which he will have to overcome, before he receives the just *recognition* that his labor deserves.

Were inventors to rely mainly upon the commendations of their friends, acquaintances or the general public, as an inspiration to labor, there would be but *few* great inventions,—they could all be counted on one's *fingers*, as the world looks upon inventive persons as a class of people that devote their time and talents to that which is visionary or unpractical, thereby meriting *only* ridicule or condemnation. This is no groundless assertion, for *facts* will prove the faithfulness of it. Prior to Singer's new, famous sewing machine, the workmen engaged in the shop wherein he was at work upon his experimental machine, became so *disgusted* with the whole business that they left him, believing it time and money thrown away. Again, when Westinghouse attempted to introduce that extremely valuable invention—the air brake,—he met for a time with the most *chilling* reception, both in this and foreign countries.

He, whose inventions are the marvel and wonder of our age,—Thomas A. Edison, was, for awhile, subjected to unstinted abuse and ridicule from almost every quarter. In fact, some of the grandest creations of his wonderfully inventive mind were considered *stupid failures* until it was actually demonstrated through their successful operation that they were the very *opposite*, when hostile criticisms were withdrawn, and he was lauded to the skies. So we might go through the entire list of inventors, from the earliest times to this present date, and barely a “baker's dozen” would be found who have not experienced the same unkind and undeserved opposition, not *only* of the masses, but, in *most* instances, of their own relatives or intimate friends.

Taken as a class, inventors are extremely *sensitive* to criticism. A public recognition of the value of their invention is a portion of the reward they are eager for and expect, and none but inventors can explain how very disheartening are the unkind and unsympathetic criticisms which they are compelled to listen to; and these criticisms are all the harder to *bear* because, in the majority of cases, they are as undeserved as they are unkind, frequently displaying the ignorance of the critic.

Pluck is everything. A man to be a great inventor must have a large amount of courage, plenty of nerve, be independent in thought and action, and filled to overflowing with hopefulness and determination, and, if *necessary*, be prepared to endure privation

and poverty in its worst forms. Without these attributes no man can become a *great* inventor.

There is nothing which will so well illustrate the truthfulness of the above, as a comprehensive glance at the life of that great inventor—Elias Howe Jr., (being *one example* selected out of *many*), showing the trials and hardships *he* was compelled to undergo ere success was assured him.

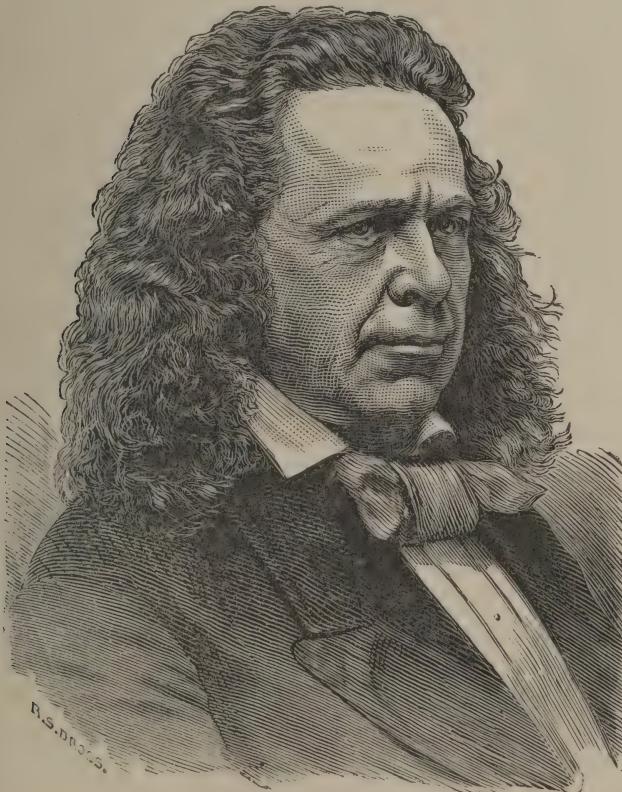
The inventor of the sewing-machine, Elias Howe Jr., was born at Spencer, Mass., in the year 1819. His father was a miller and a farmer also. But as he had eight children his total income barely sufficed to support himself and family. At the age of six years Elias was set at work sticking wire teeth into strips of leather for "cards," used in the manufacture of cotton. Next we hear of him assisting about his father's farm and mills, and in winter attending the district school. He kept on in this manner until he was sixteen years of age.

In the year 1835, he went to Lowell, and obtained work with a manufacturer of cotton machinery, where he remained two years. He next found employment at Boston, in the shop of Ari Davis, a manufacturer of philosophical instruments, and an inventor as well.

Upon a certain day in the year 1839, two men, one a mechanic and the other a capitalist, who were striving to invent a knitting-machine, and who had arrived at a point where they could proceed no farther, called upon Ari Davis to see whether he could not solve the difficulty, and make the machine work. Davis after patiently listening awhile to their explanations of the principle and operation of the machine, suddenly remarked, "What are you bothering yourselves with a knitting-machine for? *Why don't you make a sewing-machine?*" Said the capitalist: "I wish I could, but it *can't be done*." Davis then said, "Oh, yes it can, I can make a sewing-machine myself." "If such be the case," said the other, "you do it Davis, and I'll insure you an independent fortune." The conversation then ended, and never was resumed. It produced no effect upon the capitalist, neither upon Davis, for, he never so much as *attempted* to construct a sewing-machine. Yet, inadvertently though it were, seed had been *sown* upon good ground which eventually would yield a thousand-fold.

Elias Howe, then but twenty years of age, happened to be an attentive listener to the conversation between the master of the shop and the visitors, and had been deeply impressed by it, and although he was himself deeply imbued with an inventive spirit,

and had already made some slight improvements on various devices, the idea of sewing by the aid of a machine had never *before* occurred to him. No one would have imagined for a single moment, that this undersized and curly-headed youth of 20,



ELIAS HOWE, JR.,

ORIGINAL INVENTOR OF THE SEWING MACHINE.

exceedingly boyish in appearance, was *destined* to invent one of the greatest revolutionizing inventions of the age. For a long time after that conversation in the shop, he was in the habit of reflecting upon the art of sewing, attentively viewing the method as performed by hand and wondering to himself whether it was *possible* to do it by machinery. During those years the thought uppermost in his mind was, what an immense *waste of power* to

employ the human arm and the intricate mechanism of the fingers, in performing so *simple* an operation as sewing, and for which but a very small quantity of strength would suffice. And oftentimes while visiting a large tailor shop where piles of clothing were lying about ready to be sewed, he would remark to himself "What a *pity* this can not be done by machinery."

He married at the age of 21, and, in due course of time was blessed with several children. Young Elias found it rather up-hill work to provide for himself, wife, and three little ones, as his earnings as journeyman-machinist brought him in only *nine* dollars a week. Moreover he was generally so fatigued from his hard day's work, that he would very often feel too exhausted to eat his frugal evening repast, and would go to bed supperless, longing quite frequently, "*to lie in bed forever and ever.*"

This pressure of poverty, combined with overwork, gradually converted Elias into a quiet, thoughtful and plodding individual.

It was this condition of affairs that caused him, about the year 1843, to set to work in earnest to invent a machine which he firmly believed would insure him an "*independent fortune.*" Once started he never faltered, neither turned he to the right hand or left hand.

Many months were virtually *wasted*, as his experiments at first were directed toward inventing a machine which should do as he saw his helpmate doing when she sewed. For he presumed, as a matter of course, that sewing must be that, and consequently his first device was a needle pointed at both ends, with the eye in the middle, that should work up and down through the cloth, carrying the thread with it at each thrust. For a long time, by night as well as by day, he thought and worked over this conception, cutting up many a piece of wood, to invent something that would work such a needle so as to form a common stitch.

On a certain day in the year 1844, this thought *flashed* upon him: *Is it essential or necessary that a machine should imitate the action of the hand?* May not there be *another* stitch? The crisis of his invention, the crisis of his life, had been reached. There soon occurred to him the idea of using *two* threads, and forming the stitch by using a shuttle and a curved needle with an eye *near the point*, and he was now firmly convinced that he had *invented* a sewing-machine. And in the month of October, 1844, he was enabled to strengthen his convictions, by means of a rough model made of wood and wire. A fortune seemed *almost* within his grasp.

His father now resided in Cambridge, Mass., where he was attempting to establish a machine for cutting palm leaf into strips for making hats. There, in his father's house, Elias, (who had for the time being, ceased to be a journeyman mechanic), commenced anew his labors on the sewing-machine.

Into the garret of the house he put a lathe and a few machinist's tools, and besides the time spent on his machine, was doing a little extra work on his own account. He was extremely poor, and the friends (?) of Elias thought he might better employ his time and talents in labor more remunerative than that of attempting to invent a machine that would *sew*. Thus it was, that with an invention in his *head*, that since that time has brought him in over two hundred thousand dollars in a single year, and from which more than one manufacturing concern has realized an actual profit of one thousand dollars a day; he could hardly procure the necessities of life, much less could he pay for the material needful for the construction of a working machine.

George Fisher, a young friend of Elias Howe, and who had recently fallen heir to some property, was at this time residing at Cambridge, and as the young men had oftentimes chatted together regarding the feasibility of such a machine, Elias succeeded in interesting his friend to such a degree as to induce him to enter into a partnership with him on the following terms:—Fisher was to receive Elias and family into his own house, board them all during the time Howe was at work on the machine, allow him to utilize his garret as a workshop, and furnish money for the purchase of materials and tools, to the extent of five hundred dollars. While in return for that, George Fisher was to own one-half the patent, if the machine should prove *worth* patenting.

It was in the early part of December, 1844, that Howe removed to Fisher's house, transformed the garret into a workshop, procured necessary tools and material, and set himself to work. Neither of the two young men were indulging in any dream of benevolence. Far from it. Howe's desire was to invent a sewing-machine and thereby relieve himself from painful daily toil; while Fisher's incentive was two-fold, to render aid to an old friend, as well as to own a share in what *might* prove a valuable patent. Aside from Fisher, nobody appeared to have any faith in Howe's undertaking, for, according to George Fisher's own *sworn statement* given at a later date, he testified: "I believe I was the only one of his friends and neighbors in Cambridge that had any confi-

dence in the success of the invention. He was generally looked upon as very *visionary* in undertaking anything of the kind, and I was thought very *foolish* in assisting him."

Throughout the entire winter of 1844-'45, Elias Howe worked on his machine, and so clear and complete was his conception of what he desired, that in the month of April he managed to *sew a seam* by his machine, and in the middle of May, 1845, he had the satisfaction of seeing his machine all completed. In the month of July, he sewed with his sewing-machine all the seams for two suits of clothes,—the sewing of both of which greatly outlasted the cloth.

After the completion of his machine, Howe realized that his difficulties had only *just begun*. When he had brought his machine to the point of working a few stitches, he requested a Boston tailor to come to Cambridge, and give the machine a trial, but the man's comrades dissuaded him from going, alleging that a sewing-machine if it worked *well* would necessarily reduce every tailor to *beggary*; and this proved their firm unalterable conviction for the following *ten years*. Looking back, it does seem *strange*, how the Boston tailors could for so long a time persist in their opinion, especially as Howe, a few weeks after the completion of his machine, gave them the opportunity to see with their own eyes what it would do, and that it would prove a *benefit*, rather than an injury, to the tailor fraternity. He placed his ingenious piece of mechanism in one of the rooms of the Quincy Hall Clothing Manufactory, and, taking his position before it, offered to sew any and every seam that they should choose to bring him.

One tailor after another passed to him a garment and saw its seams sewed perfectly at the rate of 250 stitches a minute, which was *seven times* faster than it could be accomplished by hand. For a fortnight he sat there, daily sewing up seams for everybody that felt inclined to bring him garments. To crown it all, he finally *challenged* five of the *swiftest* sewers in the manufactory to sew a race with his machine. Ten seams of equal length were prepared, five of which were placed by the machine while the remaining five were given to the girls. What was the result of the trial? The gentleman who was to decide the wager, and who kept the time, testified under *oath*, that, although the five girls were the *swiftest* sewers in the establishment, and that they sewed much faster than was usual for them to, Mr. Howe finished his five a little *before* they finished their five, and the umpire, a tailor him-

self, swore that "the work done on the machine was the neatest and strongest."

One can well *wonder* that manufacturers were so blind to their *own* interests, as to neglect setting Howe immediately to work at constructing sewing-machines, when such a positive proof of its capability and value were furnished them. But not a machine was ordered, and no tailor encouraged him either by look, word, or deed. Their objections to his machine were various. Some asserted that it did not make the entire garment; others believed that it would beggar all hand-sewers; others lacked the manhood to encounter the savage opposition of the journeymen, and the remainder, while admitting the utility and excellence of its work, insisted, "We are doing well as we are, and fear to make such a change." Another serious obstacle in the way of its introduction was its *great cost*, as in that year (1845) Howe could not afford to sell one for less than *three hundred dollars*; and as the larger establishments would require forty or fifty, it would necessitate considerable expenditure on their part.

Howe, instead of becoming disheartened at the cool reception accorded to his machine, became, if anything, more *emboldened*, and his next step was to again shut himself in his garret workshop for nearly four months, for the purpose of making another machine, to be deposited in the U. S. Patent Office. Toward the close of the summer of 1846, the model and requisite papers being ready, Fisher and Howe made the journey to Washington, and while there the sewing-machine was placed on public exhibition, the result being to afford *amusement* to the spectators,—*nothing more*. And on the 10th of September, 1846, they obtained their patent, and shortly afterwards turned their faces homeward.

Fisher was becoming completely discouraged, as for many months he had supported Howe and his family, had advanced in the enterprise about two thousand dollars, while from the present outlook the chances of his making anything, or even getting his money back, looked *very* dubious. As a consequence Howe moved back again to his father's house.

But our inventor lacked neither pluck, persistency, or enthusiasm, and seeing no probability of securing the *adoption* of his machine by his *countrymen*, he decided to offer it to the "Mother Country." Accordingly, in October, 1846, his brother, A. B. Howe, sailed for England, taking one of the machines with him. A London manufacturer was found who had *faith* enough in the

“Yankee sewing-machine” to invest in it. This man, William Thomas, employed upwards of five thousand persons in the manufacture of valises, carpet-bags, umbrellas, shoes, etc. A. B. Howe proved a poor salesman, so far as his brother’s interests were concerned, for Thomas secured the machine for two hundred and fifty pounds sterling, and the right to use as many others in the business as he might wish. Additionally, there was a verbal agreement whereby Thomas was to obtain an English patent on the machine, and, if it came into general use, was to pay Elias Howe three pounds on every machine sold in the Kingdom. He obtained a patent,—the machines were gradually adopted there,—but Howe never received *one penny* therefrom. Elias Howe has since ventured the opinion that Thomas’ investment of two hundred and fifty pounds yielded him a profit of at least *one million* dollars.

Prior to A. B. Howe’s departure from London, Thomas proposed that Elias Howe should come over there, and adapt his machine so it would work upon corsets, agreeing to pay him three pounds a week, and also to defray the expense of workshop, tools, etc. He returned to his brother at Cambridge with this offer. Elias Howe, having speedily used up the two hundred and fifty pounds for paying for family necessaries, and there being no other prospect in view, accepted the offer, poor as it was, and on February 5, 1847, both the brothers set sail for London, occupying the steerage and cooking their own food.

On his arrival in London, the inventor immediately commenced work in Thomas’ shop, and as his employer advanced the necessary funds, he sent for his wife and three children, who soon joined him. In about eight months Elias succeeded in adapting his machine to the purposes of the corset-maker, and as he then undertook to take advantage of his circumstances, and treat him more like a *slave* than as a free man, presumably with the intention of getting rid of him, now that he had served his purposes, he boldly resented such treatment, whereupon Thomas discharged him from his employ.

*There he was*, a poor man with an invalid wife and three children on his hands, a stranger in a strange city. But he did not give way to despair. He rented a small room to use as a workshop, borrowed some tools and a small amount of money from Charles Inglis, a benevolent man whom he happened to come in contact with, and commenced building another machine. He was so poverty stricken that he found it necessary to send his family back to America to curtail his expenses, and his wife being too ill to walk to the ship,

he engaged a cab to carry her there, *pawning* a portion of his clothing to raise the amount necessary to pay for cab-hire.

Poverty settled upon him with *leaden weight*. And to such extremities was he driven that on more than *one* occasion he went to his friend Inglis, and *borrowed a shilling* for the purpose of purchasing *beans*, which he cooked and ate in his little workshop. In the course of four months his machine was finished. Customers proved scarce. His machine was easily worth *fifty* pounds, yet *five* pounds was *all* he could get, taking the customer's note therefor. Friend Inglis sold the note for Howe, realizing the sum of *four* pounds, and with that the inventor had to be content.

Howe had *enough* of England and desired to return to his native land, and to meet his indebtedness and pay his expenses home he *pawned his first machine and U. S. Letters Patent*, while, to save expense of cartage, he drew his baggage to the ship on a *hand-cart* and took passage in the steerage for home and friends. Elias' brother had sometime previously returned to the United States.

Elias Howe landed in New York City in April, 1849, with just *half a crown in his pocket*. Nearly four years had elapsed since the completion of his first machine, and nearly two years since he had set foot on his native soil, and, the net result of his labors and hardships was that small piece of silver, lying *companionless* in his pocket. He at once repaired to a cheap emigrant boarding-house, and soon found employment at his trade in one of the large machine shops. He had hardly settled down to work, ere word reached him that his beloved wife was dying of consumption, but he had *not* sufficient money to carry him to his wife's bedside.

Soon he received ten dollars from his father, thus he was *enabled* to reach Cambridge in time to see his "earthly partner" breathe her last. The only clothes he had to his name was his working suit, and he was obliged to *borrow* a suit of his brother-in-law in which to attend the funeral.

His recent severe trials proved *almost* too much for him, and he looked haggard, downcast and greatly worn. While, to cap the climax, news came that the ship in which he had transported his household effects from England, had been wrecked off Cape Cod—a total loss. Friends stepped forward to relieve his immediate necessities, as well as to care for his motherless children, meanwhile work was secured for him, not, at his loved machine, but at work his friends considered much more sensible, that of a journeyman machinist, with definite wages.

Howe was considerably surprised to find on his return from London, that his sewing-machine had become celebrated, although the inventor appeared *entirely* forgotten. Various ingenious mechanics who had read, or had seen the machine itself, had turned their efforts in the same channel. While in 1849 a sewing-machine was exhibited throughout Western New York, as a *curiosity*, at a charge of one shilling for admission. Howe, upon a critical examination of these crude products, discerned that every one of them contained the *identical* devices covered by his patent, and as he had no disposition to allow others to trample on his rights with impunity, he commenced preparations for "war to the knife" against said infringers. There he was, a machinist, working at daily wages, the patience and the purses of his friends about exhausted, while his letters-patent were in pawn *three thousand* miles away. The first thing needful was to recover from England his letters-patent, as well as his first machine, and in the summer of 1849 he managed to raise the one hundred dollars requisite for that purpose, and in the autumn he received the document and machine at his home. Howe then wrote letters to infringers, warning them to desist from farther infringement, and offering to sell them licenses to continue. All, with the exception of one, were disposed to acknowledge Howe's rights in the premises and to accept his proposal. But that *one* individual induced the others to *resist* Howe's claim to the inventorship, therefore it became necessary for him to carry the matter into court. He then fully realized that he had no *small* task on his hands, for the infringers fought with a desperation, worthy of a better cause, while his father was in no position to aid him to any extent, and George Fisher had grown so luke-warm that, not only did he decline to furnish further financial aid, but was anxious to sell his half-interest in Howe's patent for *just what it cost him*.

George W. Bliss, of Massachusetts, was the individual to whom Howe was indebted for the means of securing his legal rights. Bliss, as a matter of speculation, purchased Fisher's interest in the patent, but not until he was secured against loss by a mortgage on the farm owned by the inventor's father. This generous act of his father in reality secured Elias Howe his fortune, as without help he would have been unable to proceed any further.

No "case" whatever was made by the infringers, as there confronted them the sewing-machine made by Howe in 1845, his Letters-Patent therefor, as well as the fact, that all the machines

then in *existence* were *substantially* like his. But in August, 1850, a *new* infringer appeared upon the scene, one capable of making a harder fight than they,—Isaac Merritt Singer. When in the early part of the year 1850 he first saw a sewing-machine, he at once set to work to improve it by adapting it to a much greater variety of work, in which he was successful, and shortly thereafter secured his patent.

It was Singer's energy and audacity that actually *forced* the sewing-machine upon the attention of an unbelieving public. Forming a co-partnership with two other persons, he commenced the manufacture of his machine, and although he met with many difficulties in the introduction of it, he gradually overcame them all, such was his great zeal and business tact.

But it was not long before he was in receipt of a notification from Elias Howe, that he (Singer) was undoubtedly infringing upon *his* machine, whereupon, Singer devoted all his means and energies to contesting Howe's claims.

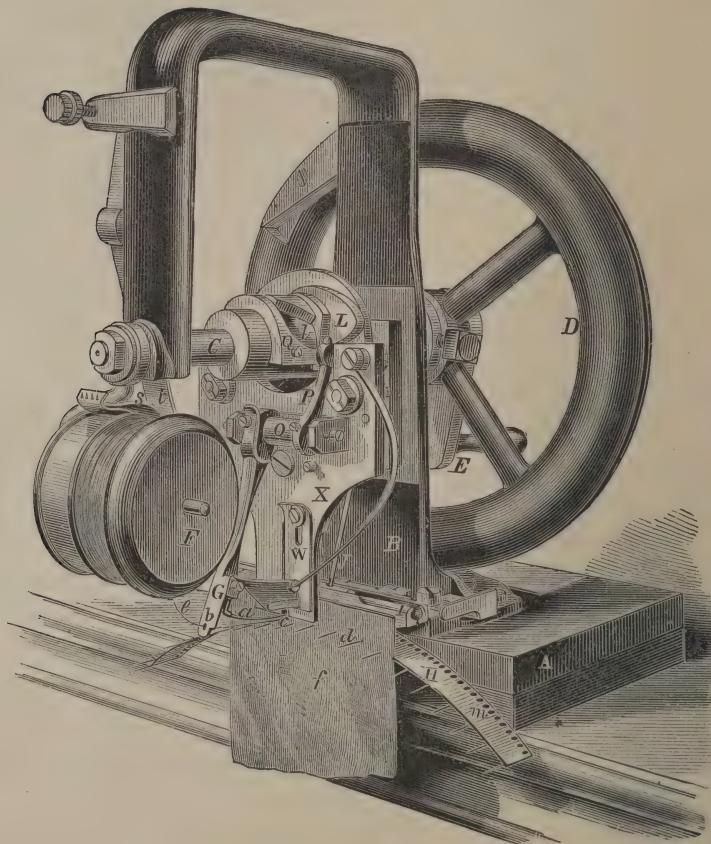
The trial of the “case” proved a long and tedious one; and it was not until the year 1854 that a *final* decision was rendered. Then, Judge Sprague, of Massachusetts, decided that Elias Howe's patent was *valid*, and that Singer's machine was an infringement. The learned Judge also observed, in the same connection, “There is no evidence in this case that leaves a shadow of doubt that, for all the benefits conferred upon the public by the introduction of the sewing-machine, the public are indebted to Elias Howe.” At the time this decision was made, it had been *nine* years since Howe made his first machine, and eight since the grant of his patent; yet, even then the patent had been so non-productive that, even with his small means, he was *able* to *buy* the other half upon the death of his partner, George W. Bliss.

Now, for the first time, he found himself the sole proprietor of the patent, and at the very period when it was about to yield him a *fortune*. For, it was not very long ere his income of but a few hundred dollars a year, rapidly *increased* to two hundred thousand dollars, and even more, per annum.

Notwithstanding the large number of valuable additions and improvements made upon the original Howe machine, every double thread machine was *compelled* to use Howe's *shuttle*, or its equivalent, while every machine necessarily used his “*needle, with the eye near the point,*” and thus every manufacturer was legally

obliged to pay him a royalty, for his invention covered all the essential points in that line of invention.

The unanimous decision of the courts, that every sewing-machine manufactured was tributary to Elias Howe, provoked a



HOWE'S FIRST SEWING MACHINE.

violent warfare between such leading manufacturers as Singer & Company, Wheeler & Wilson, and Grover & Baker,—each charging the others with infringement. It was in the year 1856, in the city of Albany, that these causes were to come up for adjudication, and these parties saw before them the pleasant(?) prospect of a legal warfare lasting many months. Luckily it occurred to one of the above-named individuals, that no matter who amongst them

invented first, or who second, they held patents that could control the entire sewing-machine business, and that it would be for their interest to *combine* together and control their manufacture, rather than to contend with and *devour* one another. After a free discussion, they all arrived at the same conclusion, and formed themselves into a "combination," and Elias Howe entered therein, upon their agreeing to issue at least twenty-four licenses to parties outside the combination, so as to prevent the manufacture of sewing-machines from degenerating into a monopoly. According to the agreement signed by the combination, Elias Howe was to receive five dollars upon every sewing-machine sold in this country, and one dollar on each one exported; while the other parties had the privilege of selling their various devices, or any one of them, at the rate of fifteen dollars for each machine, upon the consent of all the members of the combination. And the further understanding was, that a portion of the license fees should be set aside for a fund with which to prosecute infringements. Upon the renewal of Howe's patent in 1860, his fee was reduced to one dollar, and that of the combination to seven dollars. In other words, Howe received one dollar on every sewing-machine manufactured, while the combination received seven dollars on every one made, which included any one of their devices. Out of this seven dollars Howe received his one, while the remaining six dollars went into the fund used for the prosecution of infringing manufacturers.

A few years ago, the broad, or foundation patent of Elias Howe, as well as of others expired, and at this date (1888) sewing-machine manufacturers can be found in nearly every large city, while in the absence of the "old time" royalties, machines are *now* sold at such reasonable rates as to insure their use in cabin as well as palace; while, previous to the expiration of the Howe and other original patents, the prices were such as to preclude their universal adoption, although the number manufactured and sold in this and other countries during "combination prices," were sufficient to bring *millions* of dollars into the coffers of the "sewing-machine combination."

It is almost impossible to estimate the money-value of the sewing-machine to the people of this country at the present time. Eighteen years ago, one of our greatest patent experts, Prof. Renwick, stated *under oath*, that he believed, that the saving of labor alone through the use of the sewing-machine amounted to *nineteen millions* of dollars yearly, while in the year 1863 Wheeler & Wilson

published an estimate, indicating that the total value of the labor performed on the sewing-machine amounted, in that year alone, to three hundred and forty-two millions of dollars, while the increase since that time can scarcely be computed. A good hand-sewer averages thirty-five stitches a minute; Howe's first machine, three hundred stitches a minute; while the best machines of to-day are capable, on some kinds of work, of performing three thousand per minute; and as there are 20,620 *stitches* in a good shirt, one may readily see what a saving of time, labor, and expense it is to sew with the "patent sewing-machine."

On October 3d, 1867, in the city of Brooklyn, N. Y., Elias Howe departed this life at the age of forty-eight years, and, in the presence of numerous relatives and friends, his remains were consigned to their last resting place, at his adopted home, Cambridge, Massachusetts. Truly, his name will go down to posterity as *one of the greatest inventors*.

Is it not *surprising*, when we contemplate what inventions have done for our progress and civilization, that inventors meet with so *tardy* a recognition of their services? They deserve to be held in much higher esteem than they are. While the world honors and holds in great esteem, its Howe, its Morse, its Stephenson, its Bessemer, its Edison and its Bell, as well as many others, still, there remain untold *thousands* of names of inventors of useful things, valuable to the world, that should be inscribed in *enduring* letters on the scroll of fame. Inventors *needs* are in the *present*, and what they require is *encouragement* while they are *alive*, not after they are *dead*; and mankind generally, can be employed in no nobler sphere of action, than that of lending a timely, helping hand to every inventive genius, in whom are discernible evidences of the faith and hope, that, though cast down, are not destroyed, and whose flashing eyes bespeak confidence in himself and his great and central idea,—*the creation of something new*.



# APPENDIX.



# APPENDIX.

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FOR INVENTIVE AND INTELLIGENT SEEKERS AFTER  
WEALTH.

PREPARED EXPRESSLY FOR THIS WORK.

Containing Full *Authoritative* Particulars Regarding the  
CASH PRIZE OF ONE HUNDRED THOUSAND DOLLARS,  
(The joint offer of one hundred business men of Buffalo, N. Y.)

AND ALSO THE  
CASH PRIZE OF TWENTY-FIVE THOUSAND FRANCS,  
(The offer of Leopold II., King of Belgium.)

BOTH NOW OPEN FOR COMPETITION  
TO INVENTIVE PERSONS THROUGHOUT THE WORLD.

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## PART FIRST:

### THE GREAT ONE HUNDRED THOUSAND DOLLAR PRIZE.

The subject matter embodied in the following article, is, in the main, compiled from information furnished *expressly* for this work:—"Curiosities of the U. S. Patent Office,"—at the request, and with the approval of, the projector and originator of this unparalleled Prize offer. It may, therefore, be considered OFFICIAL.

RELIABLE SERVICEREASONABLE RATES

# WILLIAM C. RAYMOND,

[William Chandler Raymond,]

AUTHOR OF "CURIOSITIES OF THE U. S. PATENT OFFICE."

# SOLICITOR OF PATENTS

▷ AND MECHANICAL DRAUGHTSMAN ▷

"Joy Building," Intersection East Genesee and Washington Sts.,

SYRACUSE, N. Y.

MANY + YEARS + OF + EXPERIENCE.

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Prepares Applications for U. S. Letters Patent, and Prosecutes the same.

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Preliminary Searches as to probable Novelty of Inventions, expeditiously made.

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Design Patents Applied for; and Trade-Mark, Label and Copyright Protection Quickly Secured.

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Caveats Drawn Up and Promptly Filed in the U. S. Patent Office.

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Special Facilities for Obtaining Foreign Patents.

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Opinions Furnished as to Scope and Validity of Patents.

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Attention Given to Rejected and Abandoned Applications.

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Assignments, Licenses, etc., Drawn in Proper Form.

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Correspondence with Inventors and Others Respectfully Invited.

**WM. C. RAYMOND, • "JOY BUILDING," • SYRACUSE, N. Y.**

## WHO WILL BE THE LUCKY ONE ?

The grandeur of Niagara, the region of enchantment which environs the great cataract, and the mad rush of the imprisoned waters as they lash themselves into foam in the rock-walled canyon of the lower river, are all features familiar to the world ; but the prodigality of nature in clustering so great a wealth of scenic wonder at one point, has singularly diverted public attention from the majesty of the noble stream above the falls. From Buffalo where the converging shores of Lake Erie curve northward and form the river banks to the first cascade, where the water begins to ripple and leap, in anticipation of the great plunge a little further on,—a distance of twenty odd miles, the clear, deep current, poured from the exhaustless urn of the Great Lake Region, moves onward with a broad, resistless sweep, as impressive in its way as the cataract itself.

Unlike other streams, the Niagara is not a capricious river, now threading its way in shallows between yellow sand-bars, now overleaping its banks in freshet fury, spreading desolation abroad. So vast is its basin, that local rainfalls have no perceptible effect in raising or lowering its surface. In season and out of season, through summer droughts and winter storms, it hastens along with full banks in its never-ending journey to the sea, as regular in its movements as the cycles of time.

Little wonder, that in this practical age, when the value of power is so well understood, thousands have looked down upon this sweeping current from the bluff which overhangs the eastern bank at Buffalo, with a feeling akin to *regret*, that a force almost *measureless*, should constantly go to *waste* ; while the world awaited the *coming* of some inventor with a “current-motor” which should *garner* the power in the rushing waters, and set it to *turning* the countless wheels of industry in the adjacent city of Buffalo. The people of that city, in some things too conservative, were strangely indifferent to this mine of unworked force, equal to a *million horses*, until its value was made *manifest* a year ago, or thereabouts, through the progressive public spirit of James B. Stafford, Esq., a leading merchant of the place.

While pointing out the fine features of the river scenery to a friend one day, the thought *occurred* to Mr. Stafford that if \$100,000 were awaiting the *inventor* of a *motor* capable of successful operation in the river, the day would not be far distant when the desired appliance would be forthcoming. Acting upon this happy idea, with characteristic energy Mr. Stafford *set to work* to

## APPENDIX.

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secure among the leading men of the city \$1,000 subscriptions to a guarantee fund of \$100,000 to pay for the patent of the "current-motor" (or submerged water-wheel) which shall hereafter be proven to meet the existing conditions. His labors were indefatigable, and, after some days of indomitable effort, the list was completed, and the \$100,000 was pledged. One hundred men accordingly now stand ready to give each \$1,000 to the genius who shall solve the great mechanical problem, in exchange for his vested rights in his appliance. The fund secured, it was deemed best to spread the knowledge of its existence as widely as possible, and to delay the work of full organization, until a sufficient number of plans, models and drawings, had been submitted as solutions of the motor problem, to insure a fair competition, and afford ample opportunity to determine their relative merits. Numbers of letters, sketches and models, have come to Mr. Stafford from various portions of America, and a few from other countries also. These, and those that may yet arrive, will be carefully classified, and preserved for future examination by a committee of eminent hydraulic engineers, which will be chosen as soon as the final organization of the subscribers is completed, and the exact terms of the competition of inventive talent, and the essential qualities of the successful motor, are determined. Meanwhile many inventors are visiting Buffalo for the purpose of studying the moods and conditions of the river, so as to provide in their respective devices against floating ice, arrange a positive means of anchorage, and determine how the power can be best transmitted from the motor itself to the mill or factory which it is intended to operate.

And this is not all: already a dozen companies have been organized to make and introduce patent "current-motors," invented through the stimulus furnished by the \$100,000 prize offer, and it is within the possibilities that some of these may turn the river current to practical account, and thereby secure to the inventor a return far greater, perhaps, than the prize which proved his primary incentive.

It is the intention of the company, or association of subscribers, to either pay the \$100,000 for the exclusive right to the entire country, or, for all the rights of manufacturing and operating in the Niagara River only, the "current-motor" which, in their judgment, best solves the problem of turning the water-power to practical account: the exact amount of ownership desired, as yet, not being positively determined.

If an inventor should be so short-sighted as to prefer to take his chances of making a fortune by working through an outside company, rather than to

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take his \$100,000, and leave all the details and cost of development to the association offering the great prize, so much the better or the worse for him, as the *outcome* may determine.

What the company or association have in view is, to hold out a *certain fortune* to the inventor who will furnish to *them* the device they desire.

It is *possible*, that when the company fully organizes, (if they have not already,) and discuss the details, they may decide to pay the \$100,000 for the exclusive right to use the successful device in the Niagara River *solely*, and leave to the inventor an opportunity to become a *millionaire* by *his* selling the water-power privileges of other swift-current rivers where current-motors will work successfully. It is very evident, however, that the inventor who can readily *capture* \$100,000 (a sum of money *not* growing on every bush) would certainly be very *foolish* to regard himself as one defrauded, if the capitalists who *risk* their money to *develop* the *possibilities* of the chosen device, should conclude to retain unto themselves the *exclusive ownership* thereof for the *entire* United States, and thus, in all probability, reap a much richer reward themselves. If this *should* be the position taken by the Buffalo subscribers to the \$100,000 prize fund, it would virtually be saying to the successful inventor:—"We will pay *you* a princely sum for your *idea*, and if from its adaptation any profits are derived, the profits shall *all* be ours."

The intention is, that a meeting of all the subscribers to the \$100,000 prize fund will be held sometime this fall (1888), for the purpose of complete organization on a working basis, the determination of the exact conditions of the prize offer, and, doubtless, the selection of a committee of expert hydraulic engineers to examine and pass upon the merits of the devices submitted.

Up to the date that the awarding of the great prize is made, which will probably not be *before* the *latter part* of the year 1889, and certainly not before the *summer* of said year, *all* devices submitted will be deemed duly *entered* in the contest for the prize.

The *successful* "current-motor" *must* meet several conditions, among them the following:—

1st. It must work in the current as it is, without the building of great dams, the construction of flumes, race-ways, etc.

2d. It must be a submerged motor, or at least one which will not be dislodged or destroyed by the great fields of heavy floating ice which comes down the river every spring.

- 3d. It must not interfere with navigation in the river.
- 4th. It must be securely anchored, and to a rock-bottom.
- 5th. It must be so constructed that it can be stopped for repairs when necessary.
- 6th. The inventor must provide for the transmission of the power from the motor to the shore.
- 7th. The cost of construction must not be so great that the interest on the investment, and the wear and tear, will be greater than the value of the power.

Summed up, the device must be a durable and comparatively inexpensive motor which will utilize great power, transmit it with a small percentage of waste, and do the work the year round whether the river be high or low, clear or filled with ice, warm or cold. It is *not* enough that the device will *move*, —it must move with a *purpose* and with great *power*.

Some persons have labored under the impression that, the object of the subscribers to the \$100,000 prize fund was to secure a motor to utilize the power of the *falls* of Niagara, and to convey the power derived therefrom, by electricity or otherwise, twenty-two miles to Buffalo; when the fact of the matter is, that what is *wanted* is a "current-motor" that will harness the power in the Niagara *river*, which flows past the docks at Buffalo at a speed of about eight miles an hour.

One thing is *certain*, and that is, an invention will have to be proven practicable beyond question, by actual trial of a finished model, so that the committee of experts may be fully satisfied and convinced that it will produce a certain horse-power at a certain specified cost, or it will not be acceptable. Facts, capable of demonstration, and *not* plausible theories, will *aid* in winning the prize.

If two or three devices should be submitted deemed of nearly *equal* value by the subscribers, there is a *possibility* that the prize may be divided up into three parts of say \$50,000, \$30,000 and \$20,000. Yet, upon the other hand, there may be no division made, and the entire \$100,000 thus kept intact. This question, as well as others, viz:—The preparing and formulating of specific specifications and conditions amongst those who have already submitted plans, and those who may, will, in all probability, be matters for deliberation at the meeting of subscribers designed to be held at Buffalo this fall, (1888).

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Should some *one* of the inventive persons into whose hands this book may fall, submit to the committee of hydraulic engineers the "current-motor" which shall *best* meet all the conditions heretofore enumerated, it will be a source of much pleasure and gratification to the author, to know that he was *instrumental* in pointing out to the successful party a rapid road to fortune.

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PART SECOND:

THE GREAT PRIZE OF TWENTY-FIVE THOUSAND FRANCS.

NOW OPEN FOR COMPETITION TO PERSONS THROUGHOUT THE WORLD.

Translated *expressly* for "Curiosities of the U. S. Patent Office," from Official Documents in French, published at Brussels, Kingdom of Belgium, by Royal assent; and now in the Author's possession.

WHO WILL SECURE THE PRIZE?

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MINISTRY OF AGRICULTURE, TRADE AND PUBLIC WORKS,

[Brussels, Belgium.]

ANNUAL PRIZE OF 25,000 FRANCS

OFFERED BY HIS MAJESTY, THE KING.

REGULATIONS RELATING TO THE CONDITIONS OF COMPETITION FOR  
THE ABOVE.

(Extract from the Royal Decree of December 14, 1874.)

Article 1.—An annual prize of 25,000 francs will be awarded for the best work on subjects chosen by the King.

---

Article 2.—The competition extends over a period of four years; it will be so arranged that during three consecutive years Belgian manuscript or printed works by Belgian authors, shall alone be admitted. In the fourth year foreigners will be allowed to take part in the competition concurrently with Belgian authors.

Article 3.— \* \* \* \* \*

Article 4.—The new edition of a printed work will be admitted to the competition only if considerable alterations and additions have been made to it.

Article 5.—At whatever date the first parts of a work may have appeared it can always be admitted to the competition if the latter part thereof has appeared during the period over which the competition extends.

Article 6.—The judgment in the competition is left to a jury consisting of seven members appointed by the King. In the competition, however, in which foreigners are allowed to take part, the jury shall consist of three Belgian and four foreign members of various nationalities. One of the Belgian members shall be appointed foreman of the jury.

Article 7.—After having considered the works submitted to their consideration, the jury will decide, whether amongst these works, one exclusive of the others deserves the award, and which.

The question will be put to the vote without division.

At least four votes will be required to decide the question affirmatively. No member can abstain from voting.

Article 8.—Works written by members of the jury are excluded from the competition.

Article 9.— \* \* \* \* \*

Article 10.—The manuscript work which has been awarded the prize must be published in the course of the year following the one in which the prize was awarded.

The works must be completed and forwarded to the Minister of Agriculture, Trade and Public Works, within the time stated in the decrees fixing the subjects of the competition. \* \* \* \* \*

In the competition to which foreigners are admitted, the works can be written in any one of the following languages:—French, Flemish, English, German, Italian, Spanish.

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## MINISTRY OF AGRICULTURE, INDUSTRY AND PUBLIC WORKS.

## KING'S PRIZE.

LEOPOLD II., KING OF THE BELGIANS.

To all present and to come,

GREETING:—Having revised our decree of the 14th December, 1874, relating to the annual prize of 25,000 francs offered by Us for the best works which have appeared during each period of four years on chosen subjects: Considering that the subjects of the competitions of the years 1888, 1889, 1890, 1891 and 1892 have been fixed by Our decrees of the 20th April and 8th December, 1885, and 10th January, 1887; on the proposal of Our Ministry for Agriculture, Industry and Public Works

We have decreed and hereby decree:

Article 1.—In derogation of our decree of the 10th January, 1887, fixing the subject of the competition of 1892, the prize of 25,000 francs awarded in the said competition will be granted to the author of the work which will treat best the following questions:—

1st.—	*	*	*	*	*	*	*	*
2d.—	*	*	*	*	*	*	*	*
3d.—	*	*	*	*	*	*	*	*
4th.—	*	*	*	*	*	*	*	*
Article 2.—	*	*	*	*	*	*	*	*

Article 3.—The question fixed at first for the competition of 1892, will form the subject of the competition of 1893, (mixed competition). In conformity with the provisions of Our decree of the 10th January, 1887, the prize will be awarded to the best work on the method of supplying great towns abundantly, and at the lowest price (and more especially the population of Brussels) with the best drinking water, taking the probable increase of population into account.

Article 4.—The works intended for \* \* \* competition must be forwarded to the Minister of Agriculture, Industry and Public Works, before the 1st January, \* \* \* 1893, \* \* \* .

Article 5.—Our Minister for Agriculture, Industry and Public Works is entrusted with the execution of the present decree.

Given in Brussels 23 December, 1887.

BY THE KING:

LEOPOLD.

The Minister of Agriculture,

Industry and Public Works,

CHEVALIER OF MOREAU.

—SUMMARY—

Of matters embraced by the foregoing that are of direct interest to residents of this Country desiring to compete for the Prize of 25,000 francs, (about FIVE THOUSAND DOLLARS).

Belgium desires a better supply of good drinkable water; and King Leopold II. therefore offers a Prize of 25,000 francs for the *best* work (manuscript or printed) describing a means or method of securing, at comparatively small expense, an *abundant* quantity of the *purest* drinking water for the large towns of the Kingdom,—more especially Brussels,—and taking into consideration the probable increase in population. All foreigners, as well as residents of that country, are invited to compete for the prize. The competition is open until the 1st of January, 1893, at which date, or thereabouts, the prize is to be awarded. Works intended for this competition may be written (or printed) in either English, French, German, Italian, Spanish or Flemish. A jury, comprising seven members, three Belgians and four foreigners of various nationalities, are to decide who is the successful competitor. The works must be completed, and forwarded to Brussels in time to arrive there *prior* to January 1st, 1893; and be addressed to—"Chevalier of Moreau, Minister of Agriculture, Industry and Public Works, Brussels, Belgium."

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Additional reading matter on following page.

# AN · I · OBTAIN · A · PATENT?

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I will then inform you, whether (in our opinion), your device possesses patentable novelty. If probably patentable I then instruct you as to further procedure, expenses, etc. My long experience enables me, in most cases, to speedily decide as to their probable patentability. For this opinion or advice I make **no charge**. If I have doubts as to the novelty of your invention, you are then advised as to the proper steps for you to next take.

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